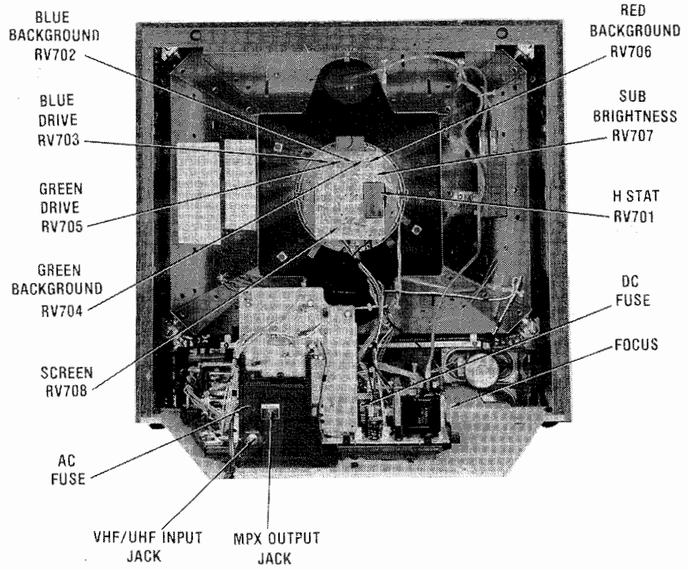


CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove six screws holding cabinet back and remove back. Disconnect HV anode, CRT socket, deflection yoke connector, degaussing coil connector, speaker connector, ground leads all required cabling. CRT may be removed at this point of disassembly. Loosen two screws holding chassis assembly to cabinet front, slide assembly out of cabinet and remove deflection yoke.

CRT REMOVAL

Follow "Chassis Removal" procedure and loosen and remove CRT neck assemblies. Remove ten screws holding front mask assenbly to cabinet front and remove back. Remove four nuts holding CRT to cabinet front and lift CRT out of cabinet. Do not lift CRT by the neck.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE DEVICES

A 1.6-amp fuse is used for low-voltage power-supply protection. (See photo, Cabinet - Rear View.)

A 6.3-amp fuse is used for AC line protection. (See photo, Cabinet - Rear View.)

CHANNEL TUNING

Channel Up and Down buttons are provided for channel scanning with ten numbered buttons 2nd Enter Button (remote transmitter) provided for one or two digit enter direct access channel selection. Fine tuning is automatic.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Frequency Control.

WIDTH

The width may be varied by adjusting the Horiz Size Control. (See photo, Chassis - Top View.)

FOCUS

The focus may be varied by a focus control. (See photo, Cabinet - Rear View.)

AGC

The AGC may be varied by an AGC control.

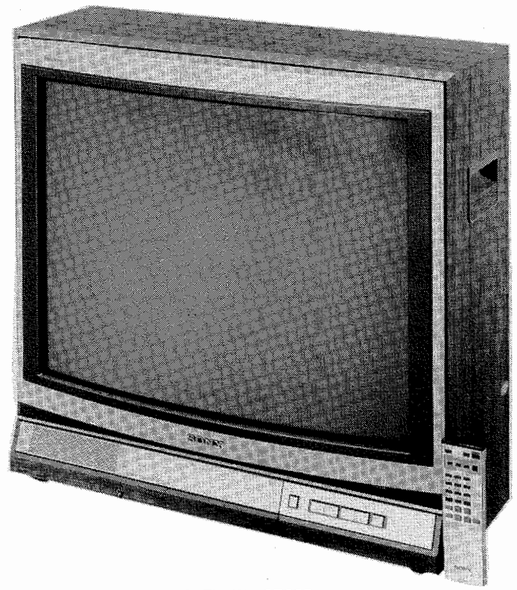
CENTERING

Horizontal centering is accomplished by proper placement of the horizontal centering jumper. (See photo, Chassis - Top View.)

Vertical centering is accomplished by proper placement of the vertical centering jumper. (See photo, Chassis - Top View.)

SAMS PHOTOFACT®
For Supplier Address See PHOTOFACT Index

SONY MODELS KV-2725R/26R/ 28R/29R(CH. SCC-754Y-A/V-A/W-A/X-A)



MODEL KV-2728R

MODEL	CHASSIS
KV-2725R	SCC-754Y-A
KV-2726R	SCC-754V-A
KV-2728R	SCC-754W-A
KV-2729R	SCC-754X-A

MODEL KV-2728R

SAFETY PRECAUTIONS

See page 4.

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4300 West 62nd Street, P.O. Box 7092, Indianapolis, Indiana 46206 U.S.A.

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co. as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co. by the manufacturers of the particular type of replacement part listed.

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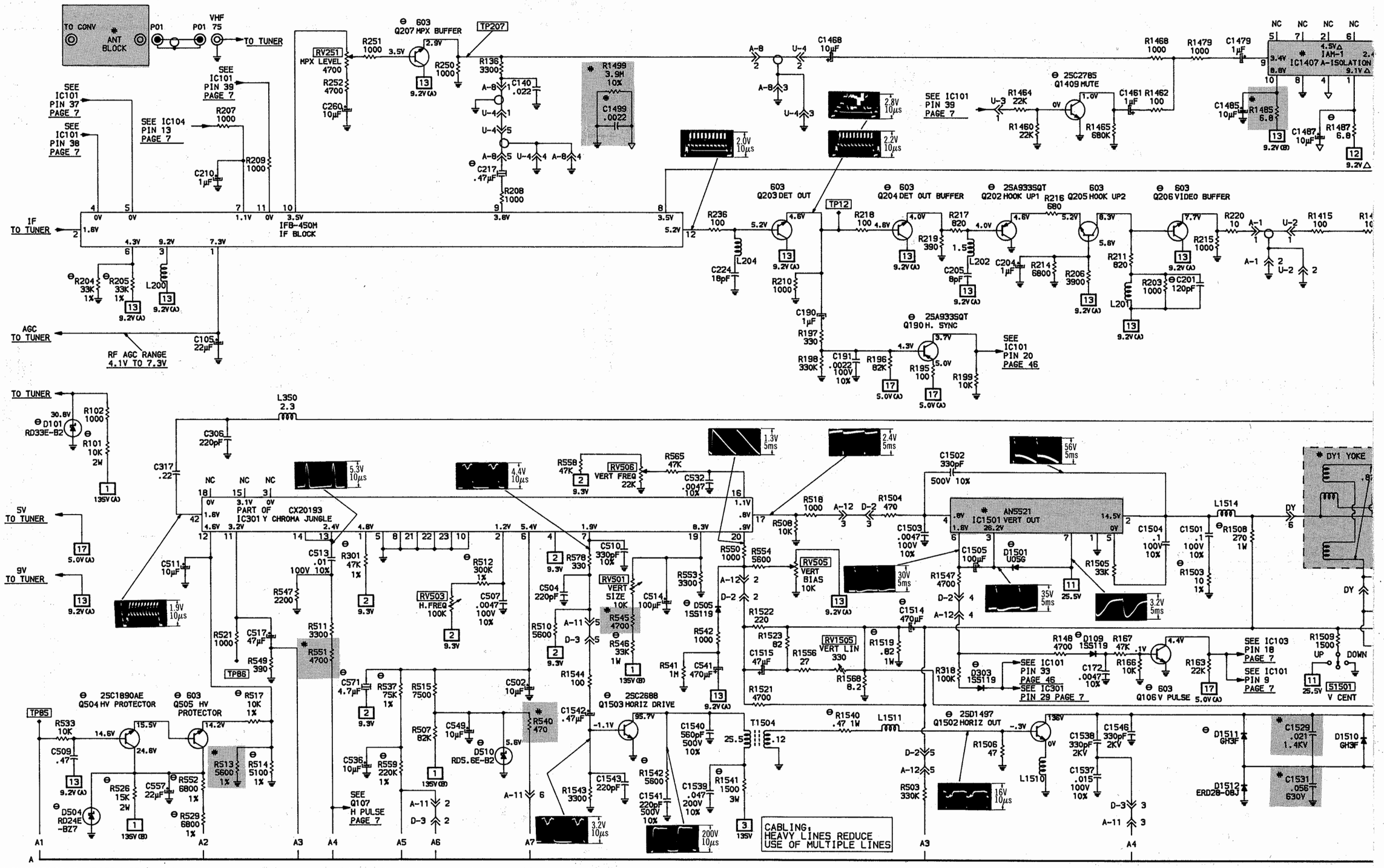
88PD01641

DATE 9-88 SET 2601 FOLDER 2

SET 2601 FOLDER 2



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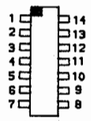
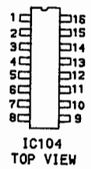
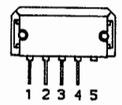
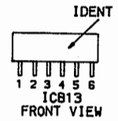
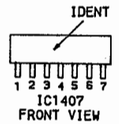
TERMINAL GUIDES

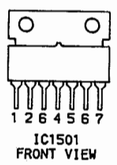


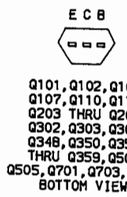


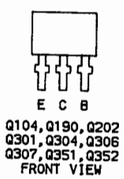


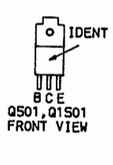


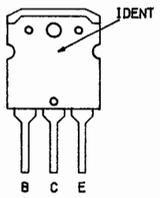


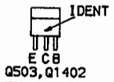


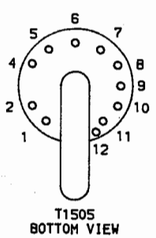










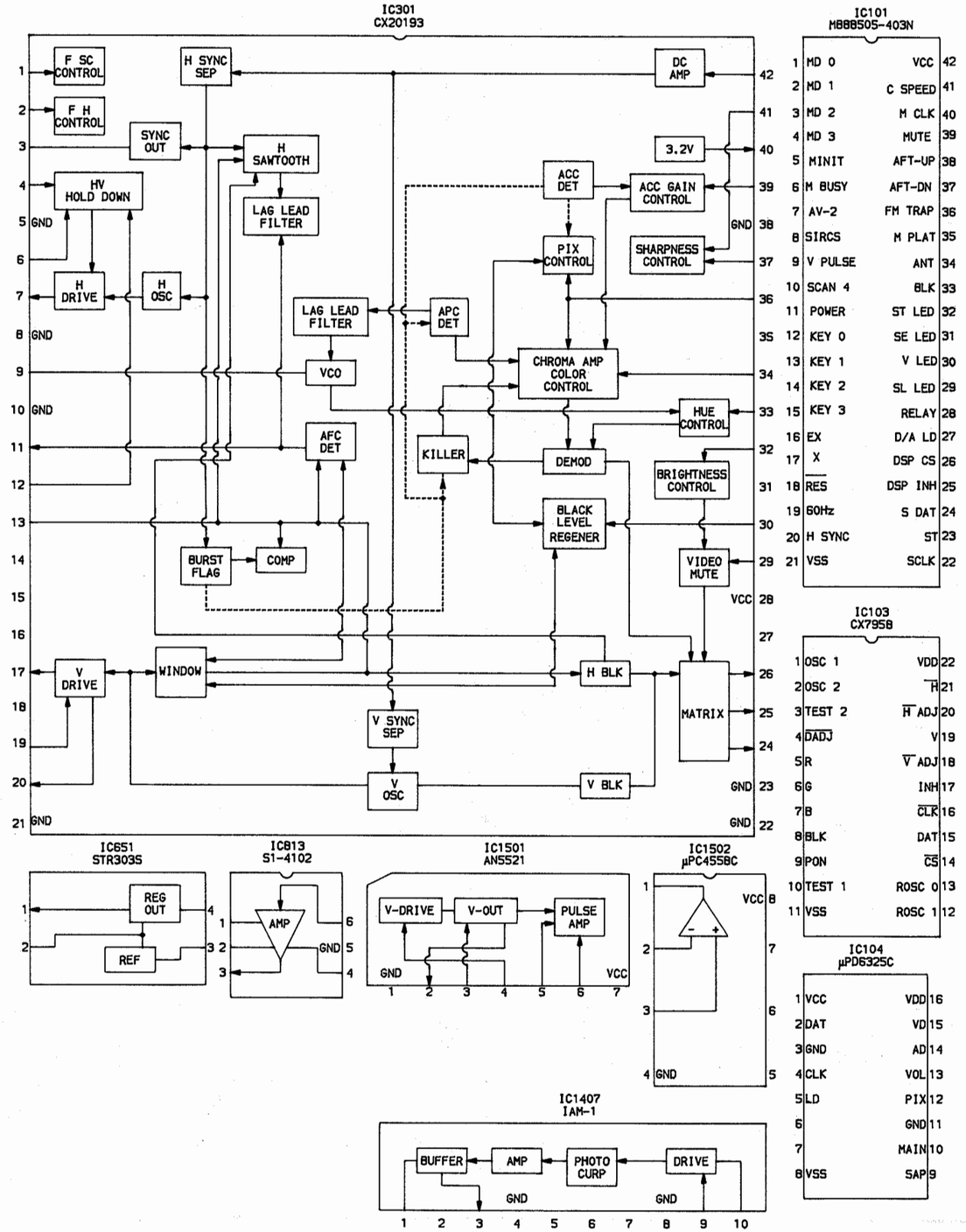


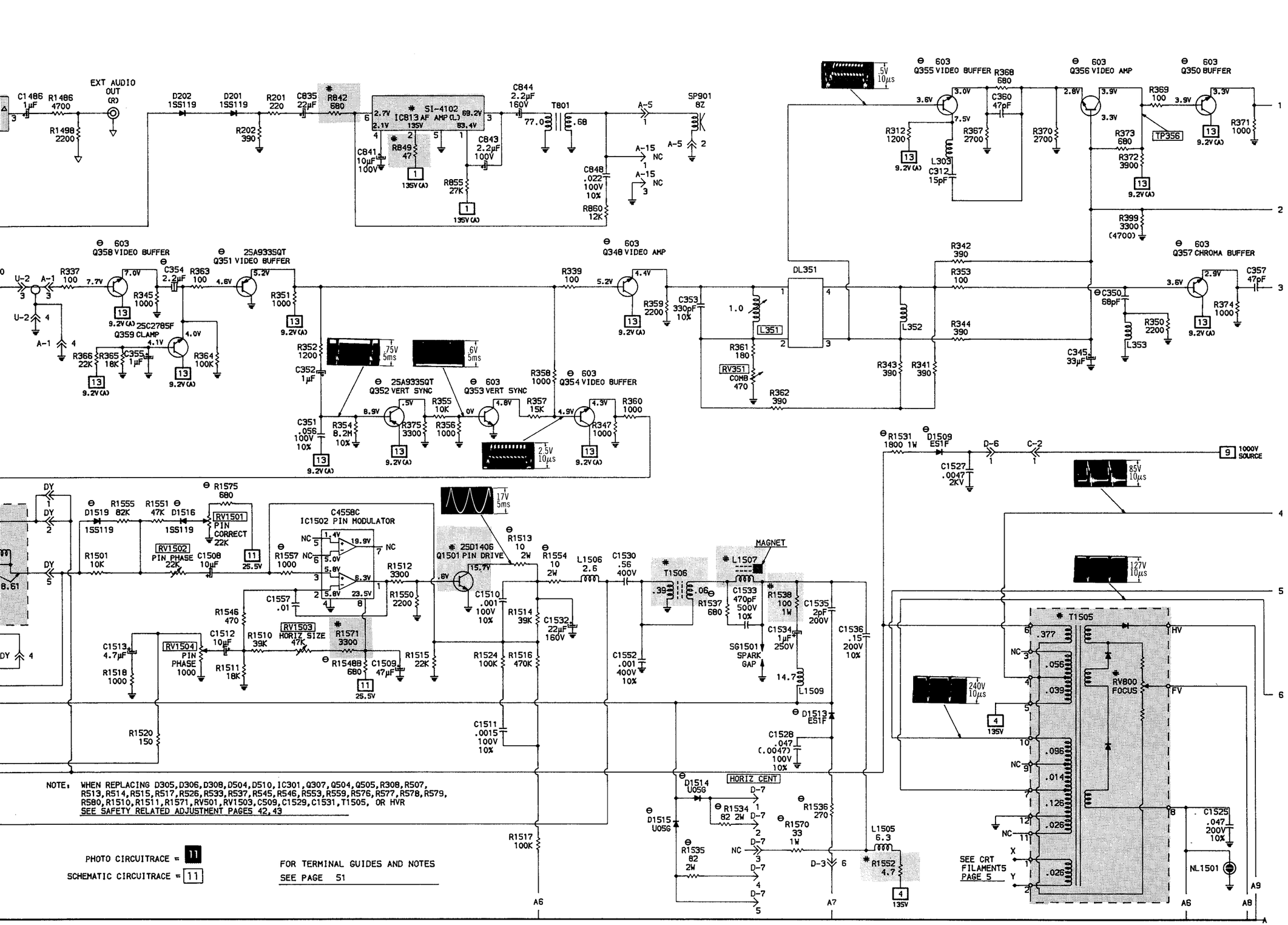
 # For SAFETY use only equivalent replacement part, see parts list.

—✕— Circuitry not used in some versions
- - - Circuitry used in some versions
⊖ See parts list
※ Nominal value
⏚ Ground
Chassis
▽ Common tie point

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms: triggered scope, keyed rainbow generator.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltages maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Capacitors are 50 volts or less, 5% unless noted.
Electrolytic capacitors are 50 volts or less, 20% unless noted.
Resistors are ½W or less, 5% unless noted.
Value in ( ) used in some versions.

IC FUNCTIONS



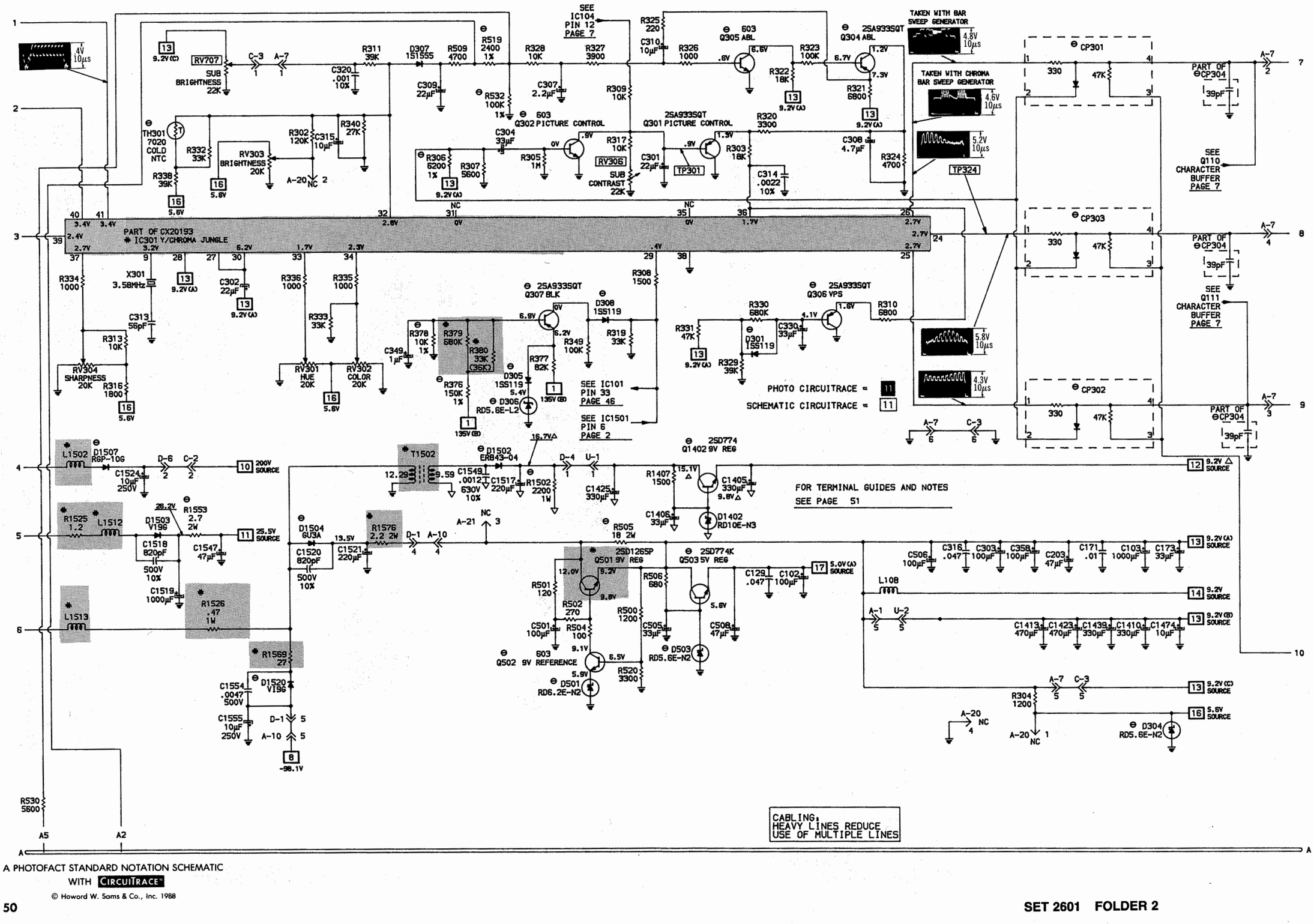


NOTE: WHEN REPLACING D305,D306,D308,D504,D510,IC301,Q307,Q504,Q505,R308,R507, R513,R514,R515,R517,R526,R533,R537,R545,R546,R553,R559,R576,R577,R578,R579, R580,R1510,R1511,R1571,RV501,RV1503,C509,C1529,C1531,T1505, OR HVR
SEE SAFETY RELATED ADJUSTMENT PAGES 42,43

PHOTO CIRCUITRACE = 11

SCHEMATIC CIRCUITRACE = 11

FOR TERMINAL GUIDES AND NOTES
SEE PAGE 51



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SAFETY PRECAUTIONS

SERVICE WARNING

Service work should be performed only by qualified service technicians who are familiar with safety checks and guide lines.

1. For continued safety, no modification of any circuit should be attempted unless recommended by manufacturer.
2. Disconnect power source before replacing parts as some parts may be electrostatic sensitive.
3. Use an isolation transformer between the line cord and power receptacle, when servicing chassis.

SERVICING HIGH VOLTAGE AND PICTURE TUBE

When servicing the High Voltage circuits, extreme caution should be used.

1. Discharge static High Voltage by connecting a 10 kohms resistor in series with a test lead between chassis and anode lead of picture tube.
2. Wear shatter-proof eye protection (goggles) when handling the picture tube in case of implosion.
3. DO NOT lift picture tube by the neck.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Service personnel should be aware of the procedures and instructions covering x-ray radiation. The only potential source of x-ray in present day solid state receivers and monitors is the picture tube.

1. It is only when High Voltage is excessive that x-ray radiation is capable of being emitted from shell of picture tube. Be sure the High Voltage is set at specified level.
2. An accurate High Voltage meter should be available at all times. Meter calibration should be checked periodically.
3. High Voltage should be kept at rated value - NO HIGHER. Higher voltages may cause x-ray radiation or failure of other associated components. DO NOT depend on protection circuit to keep voltages at rated value.
4. Every time a chassis is serviced, High Voltage should be checked at various brightness levels to be sure it is regulating properly.
5. While troubleshooting a set with excessive High Voltage, avoid being close to picture tube. DO NOT operate longer than it is necessary to locate the cause of excessive High Voltage. Use a variable AC transformer to regulate voltage.
6. Many components, electrical and mechanical, in present chassis have safety related characteristics which are not evident with visual inspection. When these components are known, they are identified with a # on the schematic and in the parts list. When replacing these components, for SAFETY, use only an equivalent replacement part.

SAFETY CHECKS-FIRE AND SHOCK HAZARD

Cold Leakage Checks (Sets with isolated ground.)

1. Unplug the AC cord and connect a jumper across the two prongs on the plug.
2. Turn on power switch.
3. Measure the resistance, with an Ohm meter, between the jumpered AC plug and any exposed metal cabinet parts on the set such as: antenna screw heads, control shafts, handle brackets. Exposed metal parts that have a return path should measure between 200 kohms and 5 megohm. Parts without a return path must measure infinity.

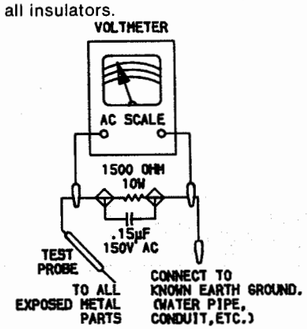
Leakage Current Hot Check

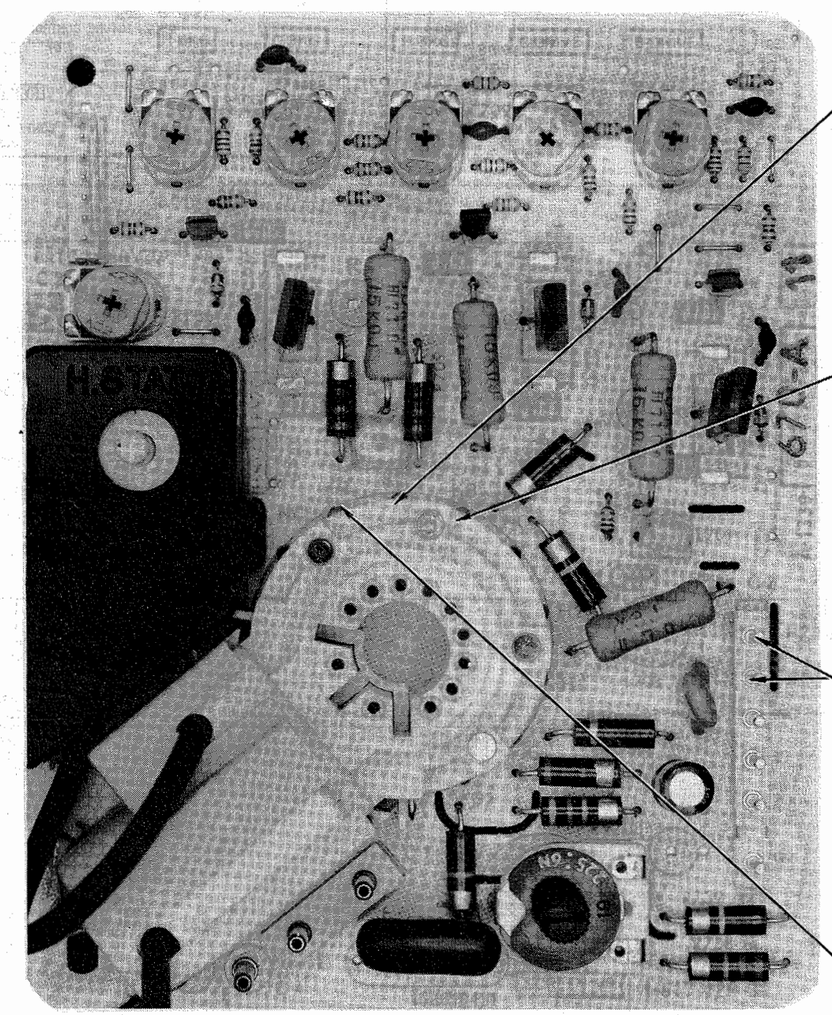
1. Plug the AC cord directly into AC outlet. DO NOT use an isolation transformer.
2. Connect a 1500 Ohm 10 watt resistor, in parallel with a .15μF 150V AC capacitor, between any exposed metal parts on the set and a good earth ground such as a water pipe. (See Figure below.)
3. Using an AC volt meter, with 1000 Ohms per volt or more sensitivity, measure the voltage across the resistor. Check each exposed part and measure voltage at each point.
4. Reverse the AC plug and repeat voltage measurement at each point.
5. The voltage at any point should not exceed .75 volts RMS. This corresponds to .5 milliamps AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected.

GENERAL GUIDE LINES

A final SAFETY check before returning the set to customer.

1. Check area repaired for poorly soldered or de-soldered connections. Check entire circuit board surface for solder splashes.
2. Check interboard wiring for pinched wires or wires contacting any high-wattage resistors.
3. Check that all control knobs, shields, covers, grounds and mounting hardware have been replaced. Be sure to replace all insulators.



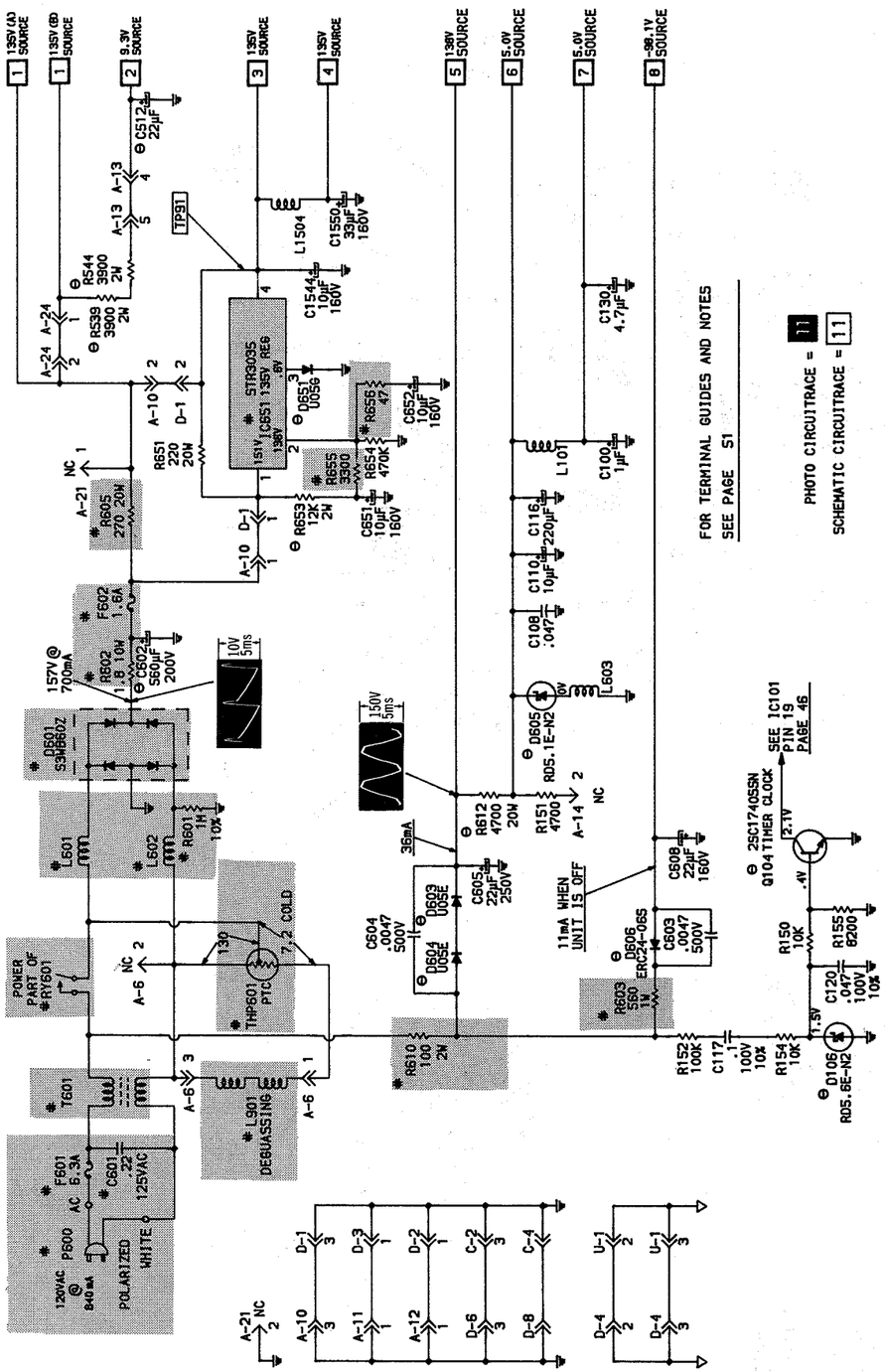


SONY MODELS KV-2725R/26R/
28R/29R(CH. SCC-754Y-A/V-A/W-A/X-A)

A Howard W. Sams QUICK-CHECKS™ Photo

C BOARD

FOLDER 2



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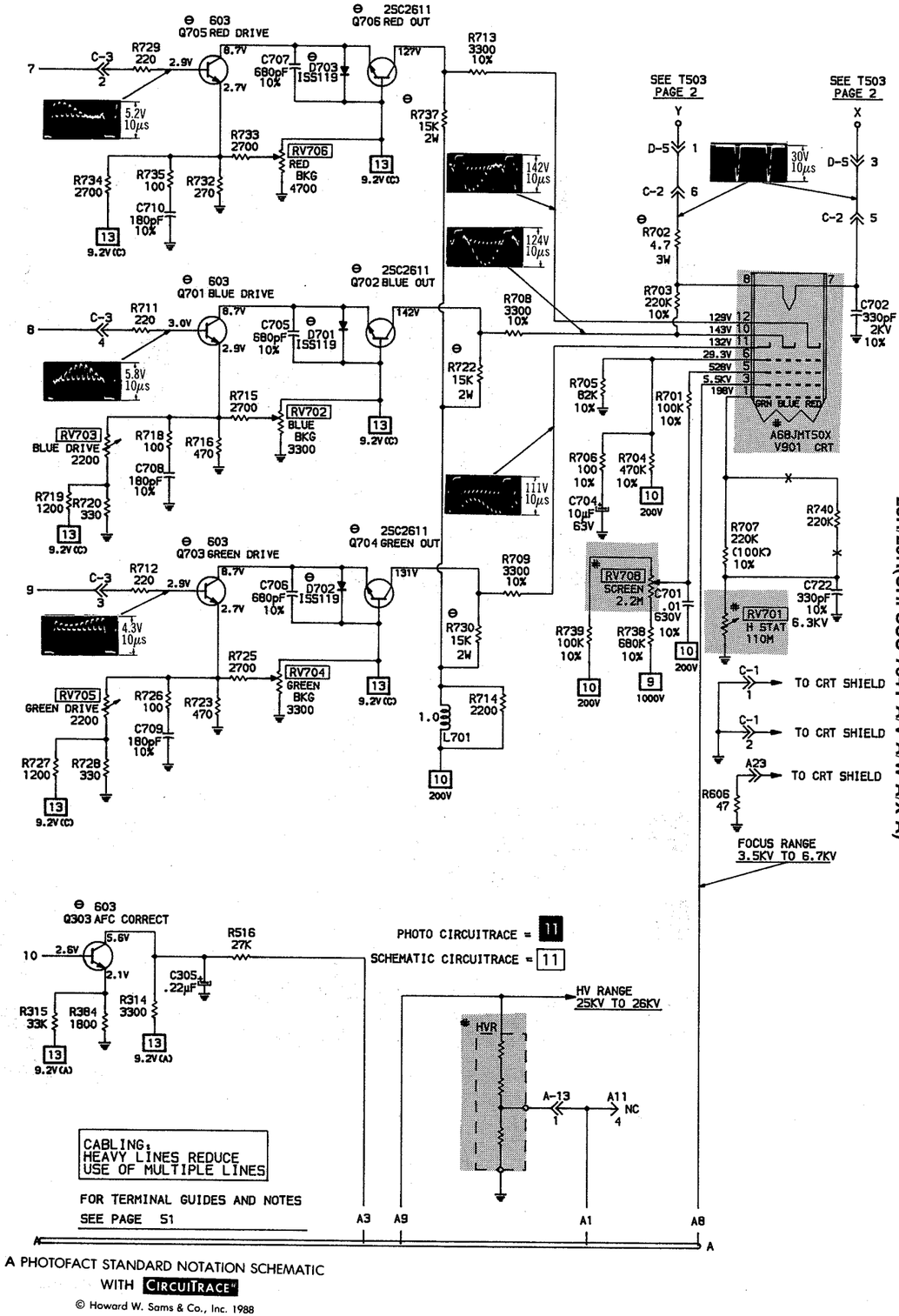
POWER SUPPLY



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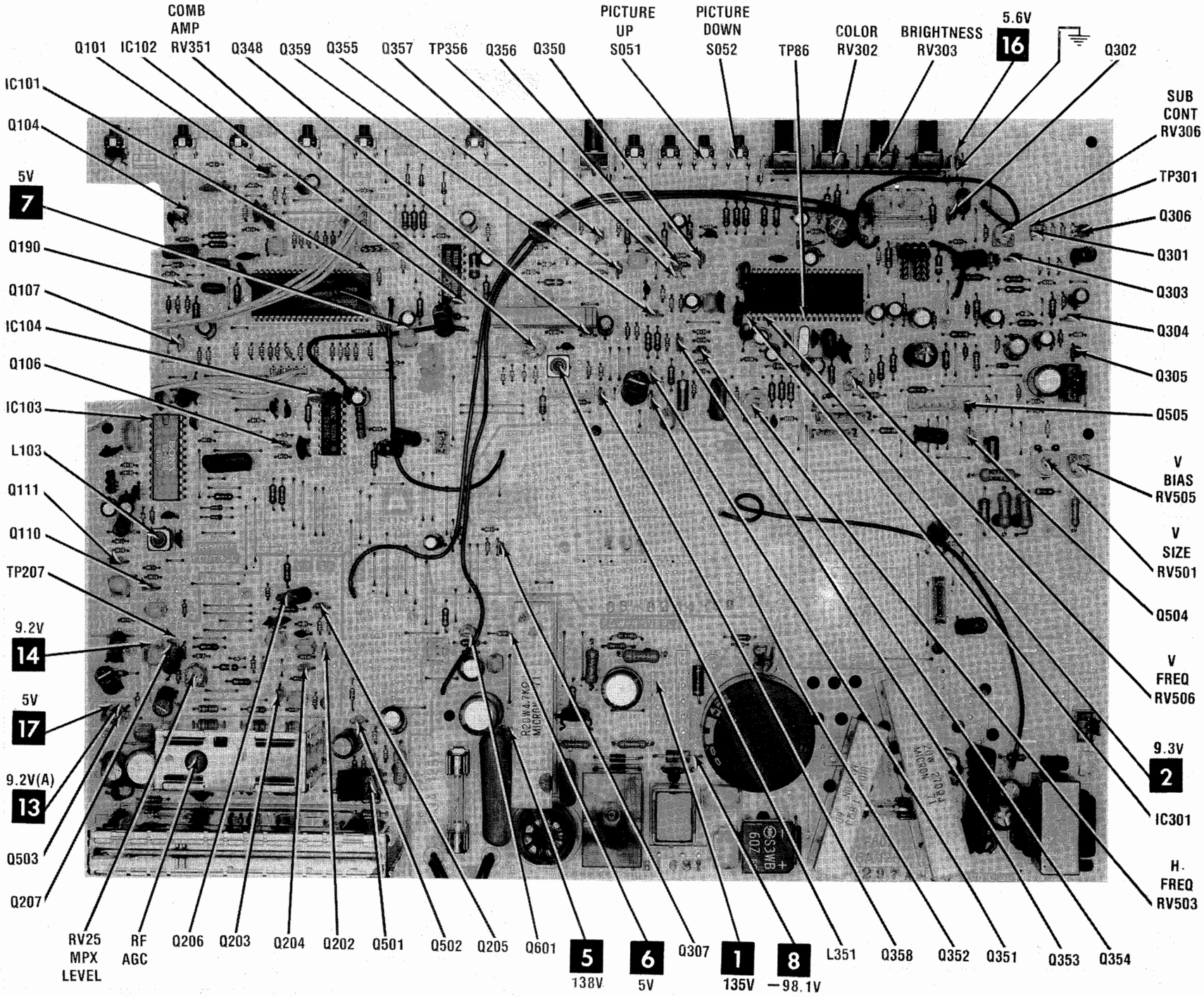
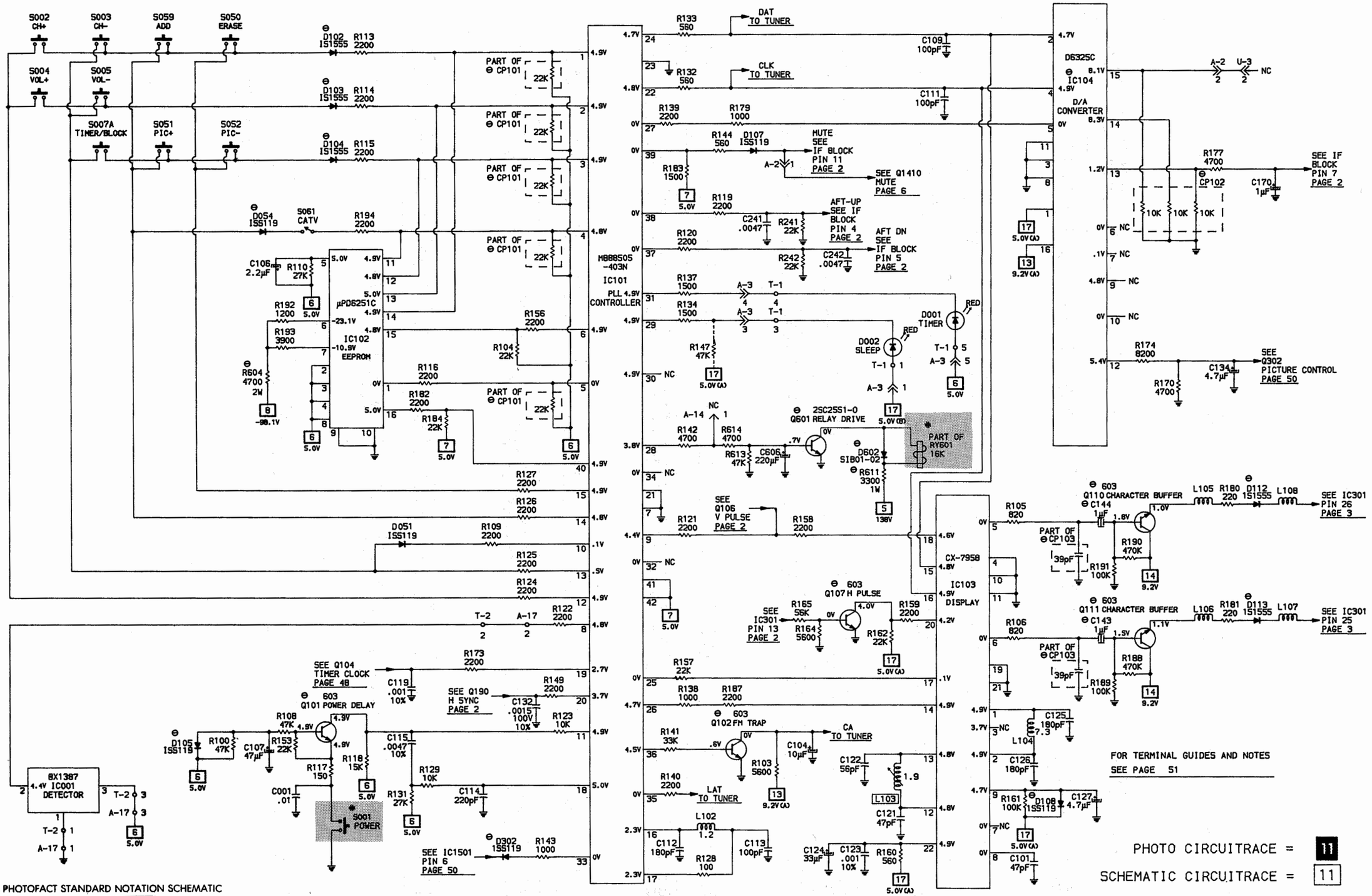


A Howard W. Sams CIRCUITRACE Photo



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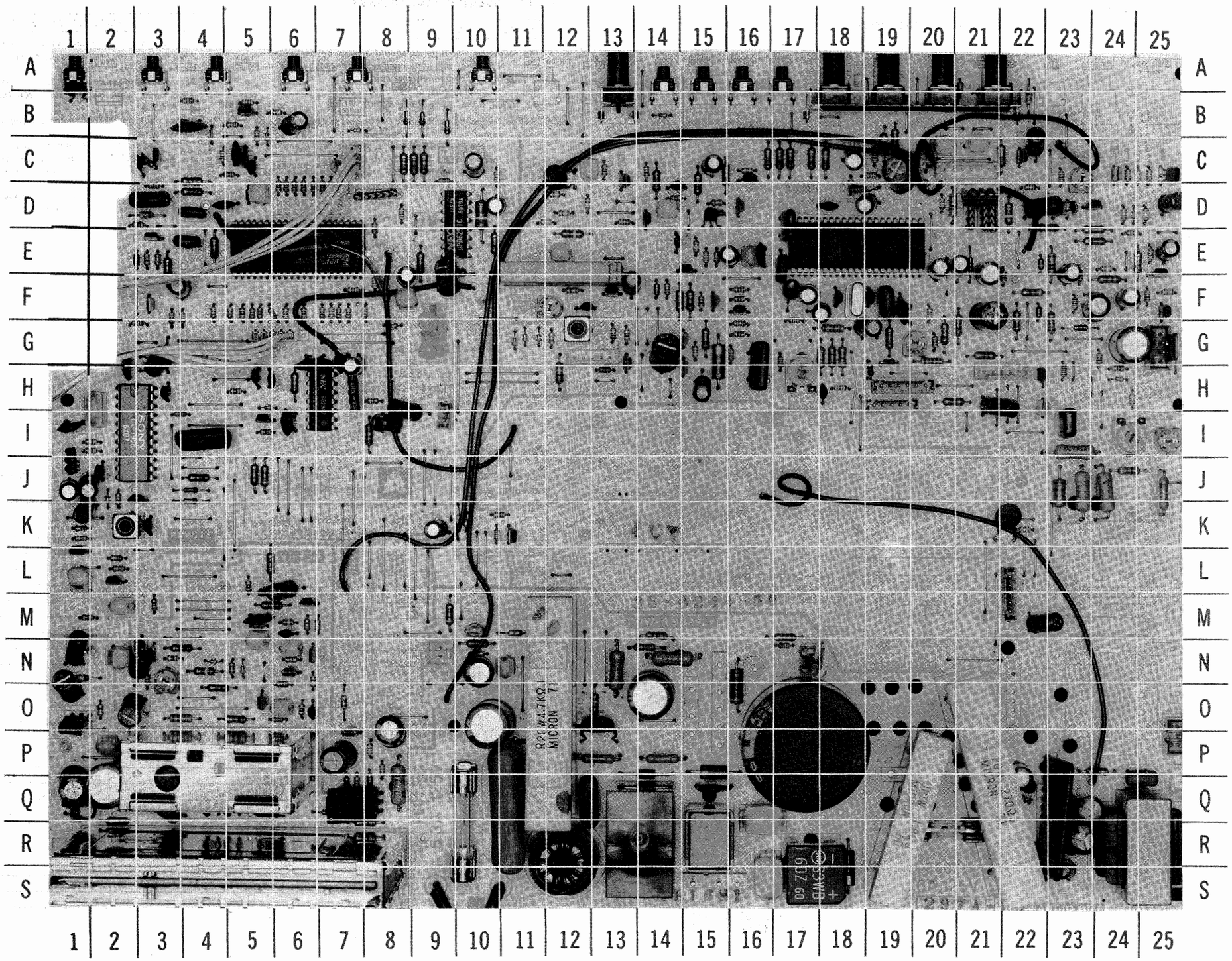
TUNER CONTROL

TUNER CONTROL

A BOARD-GridTrace LOCATION GUIDE

A2	I-9	C306	E-16	D113	J-4	Q305	F-25	R161	J-2	R320	C-25	R512	G-17	TH301	D-18
A3	G-6	C307	E-23	D201	N-5	Q306	C-25	R162	F-4	R321	E-25	R513	G-23	THP601	R-15
A5	P-25	C308	E-25	D202	N-4	Q307	K-11	R163	H-6	R322	F-25	R514	F-22	TP12	L-4
A6	S-15	C309	E-21	D301	D-24	Q348	F-13	R164	G-3	R323	F-25	R515	G-18	TP15	P-1
A7	C-21	C310	F-24	D302	G-11	Q350	D-16	R165	J-5	R324	F-25	R516	D-22	TP17	C-7
A8	M-22	C312	E-14	D303	G-11	Q351	G-15	R166	I-5	R325	F-24	R517	H-23	TP18	C-9
A10	O-15	C313	F-19	D304	B-22	Q352	H-15	R167	I-6	R326	F-25	R518	G-20	TP61	M-9
A11	H-19	C314	D-18	D305	K-10	Q353	F-15	R170	I-8	R327	E-24	R519	E-22	TP62	F-10
A12	H-22	C315	C-18	D306	K-10	Q354	F-16	R173	C-4	R328	E-23	R520	P-8	TP63	N-1
A13	H-19	C316	C-20	D307	E-21	Q355	D-14	R174	I-8	R329	D-25	R521	F-22	TP64	K-24
A14	N-9	C317	D-17	D308	G-11	Q356	D-15	R177	H-8	R330	D-24	R526	J-23	TP86	F-22
A15	P-25	C320	D-20	D501	O-7	Q357	C-13	R179	H-5	R331	E-24	R529	F-23	TU101	S-4
A17	C-7	C330	D-25	D503	N-1	Q358	G-13	R180	M-3	R332	C-19	R530	G-21	X301	F-18
A20	G-25	C345	C-15	D504	G-23	Q359	E-15	R181	M-1	R333	C-16	R532	E-23		
A21	O-15	C349	K-9	D505	H-24	Q501	Q-8	R812	E-9	R334	C-17	R533	H-20		
A23	N-16	C350	C-12	D510	H-21	Q502	P-7	R183	F-7	R335	C-17	R537	G-18		
A24	N-17	C351	G-16	D601	S-17	Q503	O-1	R184	F-8	R336	C-17	R539	J-24		
C001	A-1	C352	H-15	D602	Q-14	Q504	H-22	R187	J-4	R337	H-13	R540	H-19		
C100	E-8	C353	F-12	D603	P-12	Q505	H-22	R188	K-1	R338	C-19	R541	G-24		
C101	J-2	C354	F-13	D604	O-12	Q601	M-10	R189	K-1	R339	F-14	R542	H-24		
C102	Q-1	C355	E-16	D605	M-11	R100	B-5	R190	L-2	R340	D-18	R544	I-23		
C103	Q-2	C357	C-16	D606	P-15	R101	N-14	R191	L-2	R341	D-12	R545	J-24		
C104	Q-1	C358	G-14	DL351	E-12	R102	R-7	R192	E-10	R342	D-12	R546	J-25		
C105	Q-3	C360	D-14	F601	Q-10	R103	R-2	R193	D-10	R343	D-12	R547	G-19		
C106	D-10	C501	P-7	F602	R-20	R104	D-8	R194	C-9	R344	D-12	R549	D-23		
C107	B-6	C502	F-17	IC101	E-6	R105	I-2	R195	E-2	R345	G-13	R550	G-21		
C108	B-4	C504	H-18	IC102	D-10	R106	I-2	R196	E-3	R347	F-16	R551	G-19		
C109	H-5	C505	N-1	IC103	I-2	R108	R-6	R197	E-3	R349	K-11	R552	F-24		
C110	C-10	C506	P-8	IC102	D-10	R109	D-7	R198	E-3	R350	C-13	R553	F-20		
C111	H-5	C507	E-17	IC103	I-2	R110	C-10	R199	D-3	R351	F-15	R554	H-24		
C112	C-5	C508	O-1	IC104	H-7	R113	C-8	R201	N-5	R352	G-15	R558	G-18		
C113	C-5	C509	I-23	IC301	E-18	R114	C-9	R202	N-4	R353	C-12	R559	G-20		
C114	D-4	C510	F-18	IC813	Q-23	R115	C-9	R203	M-5	R354	G-16	R565	F-19		
C115	C-5	C511	E-20	IF201	Q-4	R116	E-9	R204	Q-5	R355	G-15	R578	G-18		
C116	F-9	C512	F-17	L101	F-8	R117	B-4	R205	O-4	R356	F-15	R601	R-18		
C117	I-4	D513	F-19	L102	D-5	R118	B-5	R206	M-6	R357	G-16	R602	Q-20		
C119	C-3	C514	F-21	L103	K-2	R119	F-7	R207	O-5	R358	G-16	R603	P-14		
C120	D-3	C517	E-21	L104	H-2	R120	F-7	R208	O-4	R359	G-13	R604	R-13		
C121	K-3	C532	F-19	L105	M-2	R121	D-7	R209	N-4	R360	F-16	R605	Q-21		
C122	J-2	C536	G-18	L106	L-1	R122	D-7	R210	O-6	R361	F-12	R606	O-16		
C123	H-3	C541	G-24	L107	C-20	R123	D-6	R211	M-5	R362	E-12	R610	Q-12		
C124	G-3	C549	H-21	L108	C-21	R124	D-6	R214	M-7	R363	F-14	R611	P-13		
C125	H-2	C557	F-24	L109	N-2	R125	D-6	R215	L-5	R364	F-14	R612	O-12		
C126	I-1	C571	F-18	L200	P-2	R126	D-6	R216	M-6	R365	E-15	R613	N-10		
C127	K-1	C601	Q-11	L201	N-5	R127	D-6	R217	N-6	R366	E-15	R614	N-10		
C129	G-6	C602	P-17	L202	N-6	R128	D-5	R218	O-6	R367	C-14	R849	Q-22		
C130	E-6	C603	Q-15	L204	L-6	R129	C-5	R219	N-6	R368	D-14	R855	Q-22		
C132	O-4	C604	O-14	L303	D-14	R131	C-4	R220	L-5	R369	D-15	R860	P-24		
C134	I-8	C605	O-10	L350	E-16	R132	F-4	R236	O-6	R370	C-15	RV251	N-3		
C140	K-22	C606	N-10	L351	G-12	R133	F-5	R241	Q-4	R371	C-15	RV301	B-18		
C143	J-1	C608	O-14	L352	E-12	R134	F-6	R242	Q-5	R372	E-15	RV302	B-19		
C144	J-1	C835	Q-22	L353	C-12	R136	K-22	R250	N-3	R373	D-15	RV303	B-20		
C170	H-8	C841	Q-23	L601	R-16	R137	F-6	R251	N-3	R374	C-14	RV304	B-21		
C171	G-7	C843	S-23	L602	S-16	R138	F-5	R252	N-3	R375	G-15	RV306	C-23		
C172	I-6	C844	R-23	L603	N-11	R139	F-5	R301	G-17	R376	N-17	RV351	F-12		
C173	H-7	C848	Q-25	Q101	B-5	R140	F-7	R302	C-18	R377	M-17	RV501	I-24		
C190	F-3	CP101	D-8	Q102	Q-1	R141	F-7	R303	C-24	R378	K-10	RV503	H-17		
C191	E-3	CP102	H-7	Q104	C-3	R142	F-5	R304	C-18	R379	M-14	RV505	I-25		
C201	M-5	CP103	J-1	Q106	I-5	R143	F-6	R305	D-22	R380	N-14	RV506	G-25		
C203	O-2	CP301	D-21	Q107	F-3	R144	F-8	R306	D-20	R384	D-23	RY601	R-14		
C204	L-6	CP302	D-21	Q110	L-2	R148	J-5	R307	D-20	R399	C-16	S001	A-1		
C205	M-6	CP303	D-21	Q111	L-1	R149	D-4	R308	C-19	R500	P-8	S002	A-3		
C210	Q-6	CP304	D-21	Q190	E-3	R150	D-3	R309	C-22	R501	Q-8	S003	A-4		
C217	M-22	D101	Q-7	Q202	N-6	R151	M-9	R310	C-25	R502	Q-7	S004	A-6		
C224	O-6	D102	B-8	Q203	O-5	R152	O-13	R311	D-22	R503	G-22	S005	A-7		
C241	Q-4	D103	B-9	Q204	N-6	R153	B-5	R312	D-13	R504	Q-7	S007	A-10		
C242	Q-4	D104	B-9	Q205	M-6	R154	E-4	R313	A-21	R505	Q-8	S050	A-15		
C260	N-2	D105	B-5	Q206	L-5	R155	C-3	R314	E-24	R506	O-2	S051	A-16		
C301	C-22	D106	D-3	Q207	N-3	R156	D-8	R315	E-24	R507	J-23	S052	A-17		
C302	D-18	D107	G-8	Q301	C-24	R157	I-4	R316	A-21	R508	G-20	S059	A-14		
C303	C-19	D108	J-2	Q302	C-22	R158	I-3	R317	C-23	R509	F-22	S061	B-13		
C304	D-22	D109	H-5	Q303	D-24	R159	F-3	R318	H-12	R510	H-18	T601	R-12		
C305	D-23	D112	J-4	Q304	E-25	R160	G-3	R319	G-12	R511	G-19	T801	R-25		



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MISCELLANEOUS ADJUSTMENTS

PRETUNING

Momentarily depress POWER Button.
Set TV/CATV Switch to desired position.

ADDING CHANNELS TO MEMORY

1. Use direct access buttons on transmitter to select desired channel.
2. Momentarily depress ENTER Button.
3. Press ADD Button to add channel to memory. A (+) will appear next to number displayed on screen, indicating addition of channel to memory.
4. Repeat steps 1 thru 3 until all desired channels are added to memory.

DELETING CHANNELS FROM MEMORY

5. Momentarily depress Channel UP or DOWN Buttons (or use direct access buttons) to select channel to be deleted from memory.
6. Momentarily depress ERASE Button. A minus (-) will appear next to number displayed on screen, indicating delection of channel from memory.
7. Repeat steps 5 and 6 Until all desired channels are deleted from memory.

HORIZONTAL CENTERING ADJUSTMENT

Tune in a crosshatch pattern. Move Horizontal Centering Connector to one of five terminals (D7-1 thru D7-5), on Plug D-7 whichever gives the best horizontal centering.

VERTICAL CENTERING ADJUSTMENT

Tune in a crosshatch pattern. Place Vertical Centering Switch (S1501) in one of three positions, (Up, C or Down), whichever gives the best vertical centering.

HORIZONTAL SIZE ADJUSTMENT

Tune in a crosshatch pattern. Perform Horizontal Centering Adjustments. Adjust Horizontal Size Control (RV1503) for correct horizontal size (width).

SUB-BRIGHTNESS ADJUSTMENT

Tune in a picture. Set Brightness and Picture Controls to Maximum. Adjust Sub-Bright Control (RV707) to a point just before blooming occurs.

VERTICAL BIAS ADJUSTMENT

Tune in a picture. Set Brightness to midrange and Picture Control to Maximum. Connect DC voltmeter to Yoke Plug DY pin 6, low side to ground. Adjust Vertical Bias Control (RV505) for 16.5 ±0.1V DC.

VERTICAL FREQUENCY ADJUSTMENT

Tune in a station. Adjust Vertical Frequency Control (RV506) for a stable picture. Change from channel to channel and adjust Vertical Frequency Control (RV506) slightly if channels are slow to lock in.

VERTICAL LINEARITY ADJUSTMENT

Tune in a picture and allow a 15-minute warm-up time. Adjust Vertical Size Control (RV501) so that the picture underscans the screen by about one inch. Adjust Vertical Linearity Control (RV1505) to center the picture on the screen. Readjust Vertical Size Control (RV501) so that the picture overscans the screen by 10% at the top and bottom.

VERTICAL SIZE ADJUSTMENT

Tune in a crosshatch pattern. Adjust Vertical Size Control (RV501) for a 10% overscan at both top and bottom of picture.

HORIZONTAL FREQUENCY ADJUSTMENT

Tune in a color bar signal. Connect DC voltmeter to TP86 (pin 11-IC301). Adjust Horizontal Frequency Control (RV503) for 3.25 ±0.1V DC.

SUB-CONTRAST ADJUSTMENT

Tune in a color bar signal. Set Picture Control to Maximum, Color to MINIMUM and Brightness to Detent. Connect a DC voltmeter to TP301 (Emitter Q301). Adjust Sub-Contrast Control (RV306) for 2.0 ±0.1V DC. Turn Brightness and Color to Maximum and check for blooming. Readjust if necessary.

RF-AGC

Tune in a station and set all controls to normal. Adjust AGC Control (on IF Block) until snow (noise) appears in the picture. Adjust in opposite direction until snow just disappears.

COMB FILTER ADJUSTMENTS

Tune in a color bar signal. Connect an oscilloscope to TP356 (Collector of Q356). Adjust 3.58MHz Trap Coil (L351) and Comb Control (RV351) for MINIMUM 3.58MHz component.

PINCUSHION ADJUSTMENT

Tune in a crosshatch pattern. Adjust Pin Phase Control (RV1502), Pin Phase Control (RV1504) and Pin Correct Control (RV1501) for straight vertical lines at the sides of the screen.

INDICATOR POSITION ADJUSTMENT

Tune in picture. Set Brightness Control to midrange. Press and hold Picture Control until bar is at Maximum. Continue to press Picture Control and adjust L103 to position end of indicator bar approximately 3/4 inch from right side of screen.

The following adjustment made using B&K Model 2009 MTS-TV-Stereo Generator:

MPX Output Level

Feed RF generator signal to antenna, pilot signal on 1kHz audio and LR modulation signal.

SAFETY RELATED ADJUSTMENTS

V.SIZE CONFIRMATION

The following adjustments should always be performed when replacing the following components (marked with ◪ on the components circuit).
Regrading components of ⊠ R545 (V.SIZE).
DY, IC301, R545, R546, R553, RV501, T1505

1. *Turn the POWER switch ON, and receive monoscope signal.*
2. ***Set the PICTURE control in to initial setting and the BRIGHTNESS control in to DETENT.***
3. *Confirm that the V.SIZE at minimum should not exceed 14.5 frames by adjusting RV501 (V.SIZE).*

H.SIZE CONFIRMATION

The following adjustments should always be performed when replacing the following components (marked with ◪ on the components circuit).
Regrading components of ⊠ R1571 (H.SIZE).
C1529, C1531, DY, R1510, R1511, R1571, RV1503, T1505

1. *Turn the POWER switch ON, and receive monoscope signal.*
2. ***Set the PICTURE control in to initial setting and the BRIGHTNESS control in to DETENT.***
3. *Confirm that the H.SIZE at minimum should not exceed 17.1 frames by adjusting RV1503 (H.SIZE).*

PICTURE BLANKING CONFIRMATION *(USA ONLY)*

The following adjustments should always be performed when replacing the following components (marked with ◪ on the components circuit).
Regarding components of ⊠ R379 and R380
D305, D306, D308, IC301, Q307, R308, R376, R377, R378, R379, R380

1. *Turn the POWER switch ON, and receive monoscope signal.*
2. ***Set the PICTURE control in to initial setting and the BRIGHTNESS control in to DETENT.***
3. *Confirm that the picture is blanked till +B voltage is more than 107.0 V DC.*
4. *Confirm that the picture is not blanked when INPUT voltage is more than 96 V AC.*

Courtesy of Manufacturer

TEST EQUIPMENT

Test Equipment listed by Manufacturer illustrates typical or equivalent equipment used by SAMS' Engineers to obtain measurements and is compatible with most types used by field service technicians.

Equipment	B & K Precision Equipment No.	Sencore Equipment No.	Notes
OSCILLOSCOPE	1560, 1564, 1541	SC61	
GENERATORS			
RGB	1249,1260		
MULTIBURST SIGNAL	1251,1260	VA62	
COLOR BAR	1211A,1249,1251,1260	VA62,CG25	
ANALOG VOM	277,111,116		
DIGITAL VOM	2830,2806	DVM37,DVM56,SC61	
FREQUENCY METER	1803,1805	FC71,SC61	
HI-VOLTAGE PROBE VOM/DMM Accessory probes	HV-44 PR-28(HV)	HP200	
ISOLATION TRANSFORMER	TR110,1604,1653,1655	PR57	
CAPACITANCE ANALYZER	820,810,830	LC53,LC75,LC76, LC77	
CRT ANALYZER	467,470	CR70	
TEMPERATURE PROBE	TP-28,TP-30		
AC LEAKAGE TESTER	1655	PR57	
LOGIC PROBE	DP51,DP21		
LOGIC PULSER	DP101,DP31		
INDUCTANCE ANALYZER	875	LC53,LC75,LC76, LC77	
FLYBACK YOKE TESTER	875	LC53,VA62	
TV STEREO GENERATOR	2009	ST65,ST66	
FIELD STRENGTH METER		FS73,FS74	

⧓R513 CONFIRMATION METHOD (HOLD-DOWN COMFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).

D504, D510, IC301, Q504, Q505, R507, R513, R514, R515, R517, R526, R533, R537, R559

(1) Preparation before confirmation

1. *Turn the POWER switch ON, and receive entirely white signals and set the PICTURE and BRIGHTNESS controls to maximum.*
2. *Confirm that the voltage of the protector terminal of H.V.R. is more than 13V DC when the set is operating normally with 120 V AC supply.*

(2) Hold-down operation confirmation

1. *Turn the POWER switch ON, and receive entirely white signals and adjust ABL current to 1645 $^{+0}_{-20}$ μA with PICTURE and BRIGHT etc controls.*
2. *Apply DC voltage of over 17.42V gradually to the protector terminal of H.V.R. via 1T40 from the DC stavilized power source. Confirm that the minimum voltage is less than 18.40 V DC whereby the raster disappears during operation of hold-down circuit.*

NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.

3. *Turn the POWER switch ON, and receive dot signals and adjust ABL current to 190 $^{+0}_{-20}$ μA with PICTURE and BRIGHT etc controls.*
4. *Apply DC voltage of over 18.85V gradually to protector terminal of H.V.R. via 1T40 from the DC stavilized power source. Confirm that the minimum voltage is less than 19.88 V DC whereby the raster disappears during operation of hold-down circuit.*

NOTE: When the hold-down circuit starts operating, switch OFF the POWER of the set immediately.

(3) Hold-down readjustment

When step (2) is not satisfied, readjustment should be performed by altering the resistance value of R513 (a component marked with ⧓).

(4) Confirmation of hold-down erroneous operation

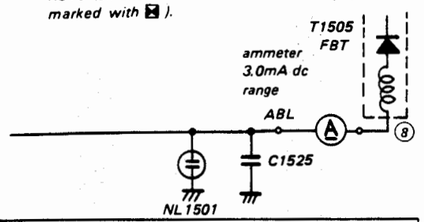
1. *Turn the POWER switch ON, and receive dot signals and set the PICTURE and BRIGHTNESS controls to minimum.*
2. *Confirm that the hold-down circuit does not operate by turning the POWER switch ON and OFF repeatedly several times.*

NOTE: If the hold-down circuit starts operating in the above case, switch OFF the POWER of the set immediately.

3. *Turn the POWER switch ON, and receive dot signals and entirely white signals and set the PICTURE and BRIGHTNESS controls to maximum.*
4. *Confirm that the hold-down circuit does not operate by performing switchover of the channels of the dot signals and entirely white signals several times.*

NOTE: If the hold-down circuit starts operating in the above case, switch OFF the POWER of the set immediately.

5. *If the above-mentioned steps 1 to 4 are not satisfied reconfirm steps (2) to (4) by altering the R513 smaller resistance value (a component marked with ⧓).*



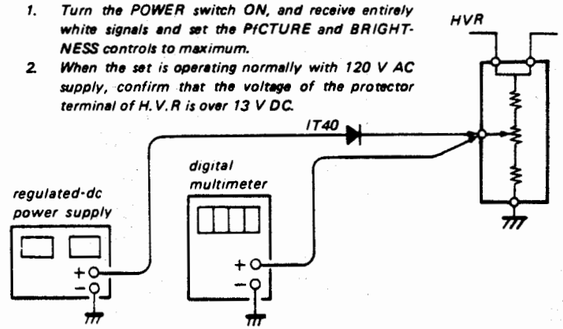
CONFIRMATION WHEN REPLACING H.V.R. (HIGH-VOLTAGE REGISTOR)

The following adjustments should always be performed with reference to whether an X-ray radiation control circuit is connected or not, when replacing H.V.R.(High-Voltage Registor)

**This check is to be performed when H.V.R. only is replaced, and has no relation to the hold-down circuit readjustment for replacement of parts marked ◪ .*

(1) Connection confirmation

1. *Turn the POWER switch ON, and receive entirely white signals and set the PICTURE and BRIGHTNESS controls to maximum.*
2. *When the set is operating normally with 120 V AC supply, confirm that the voltage of the protector terminal of H.V.R is over 13 V DC.*



- *Use a digital multimeter whose input impedance over 100MΩ when confirming the voltage of the protecter terminal of H.V.R.*

+B VOLTAGE CONFIRMATION

The following adjustments should always be performed when replacing IC651.

(1) The +8 voltage confirmation

1. *Supply 130 $^{+2}_{-0}$ V AC to with variable auto-transformer.*
2. *Receive monoscope signals.*
3. *Set the PICTURE control into initial setting and the BRIGHTNSS control into DETENT.*
4. *Confirm the voltage of TP91 is less than 137.8 V DC.*
5. *If step 4 is not satisfied, replace IC651 and repeat above steps.*

- *Digital multimeter whose input impedance over 100MΩ.*

MISCELLANEOUS ADJUSTMENTS (Continued)

Connect scope to TP207. Adjust MPX Level Control (RV251) for .7VPP ±0.3VPP.

PURITY ADJUSTMENT

If the picture tube appears to be magnetized, use a degaussing coil to demagnetize picture tube and mounting brackets. Loosen deflection yoke and slide it back as far as possible. Set Red Background (BKG) Control (RV706) to Maximum and Blue (RV702) and Green (RV704) Background (BKG Controls to MINIMUM. Adjust purity rings on rear of deflection yoke to center the vertical red band. Slide the deflection yoke forward until a uniform red screen is obtained. If necessary, use disc magnets to correct impurity at the corner of the screen. (See Parts List.) Place disc magnets at rear corners of the picture tube.

CONVERGENCE ADJUSTMENT

Connect crosshatch generator to the antenna terminals and tune in a dot pattern. Adjust the Horizontal Static Control to converge the red and blue dots horizontally over the green dot at the center of the screen. Rotate the Vertical Static Magnets to converge the red and blue dots vertically over the green dot at the center of the screen. NOTE: Rotate the two Vertical Static Magnets equally, one to the right and one to the left from vertical position. NOTE: Some versions may use a BMC Magnet. To adjust the BMC Magnet, slide it in and out to correct for insufficient horizontal static convergence. Tune in a crosshatch pattern. If necessary, remove the rubber wedges between the deflection yoke and picture tube. Tilt the deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke to the right or left to converge the horizontal lines at the top and bottom of the screen and vertical lines at the right and left sides of the screen. Replace the rubber wedges. To correct the convergence at the corners of the screen, slide a permalloy magnet assembly between the picture tube and the deflection yoke behind the areas affected on the screen. Position the permalloy assemblies for the best horizontal and vertical convergence correction in the corners affected. Repeat appropriate convergence procedure if necessary to obtain the best overall convergence.

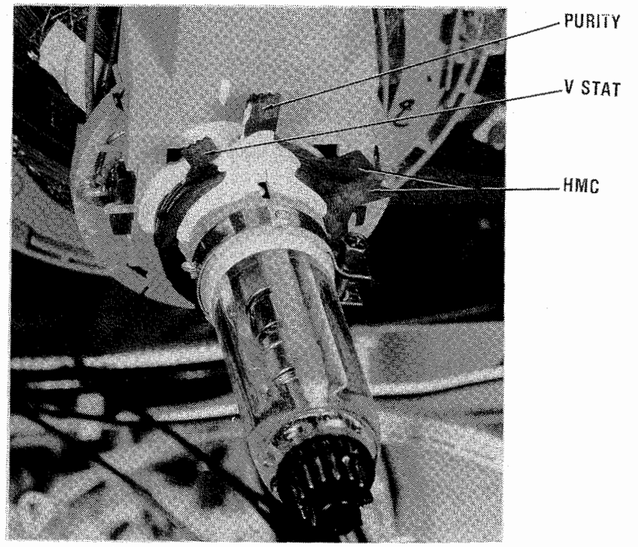
COLOR TEMPERATURE ADJUSTMENT

Connect a crosshatch generator to the antenna terminals and tune in a crosshatch pattern. Set the Brightness and Picture Controls to MINIMUM. Turn G (Green RV705) and B (Blue RV703) Drive Controls to MINIMUM. Turn B (Blue RV702), G (Green RV704) and R (Red RV706) Background (BKG) Controls to MINIMUM. Turn G2 Adjust Control (RV708) to obtain a faintly visible crosshatch pattern. Slight adjustment of BKG Control for dominant colored pattern may be necessary. Adjust Background (BKG) Controls to best white balance on the faintly visible pattern. Turn the Brightness and Picture Controls to Maximum. Adjust the Drive Controls for best white balance on the pattern. Check tracking at high and low brightness levels and repeat procedure if necessary.

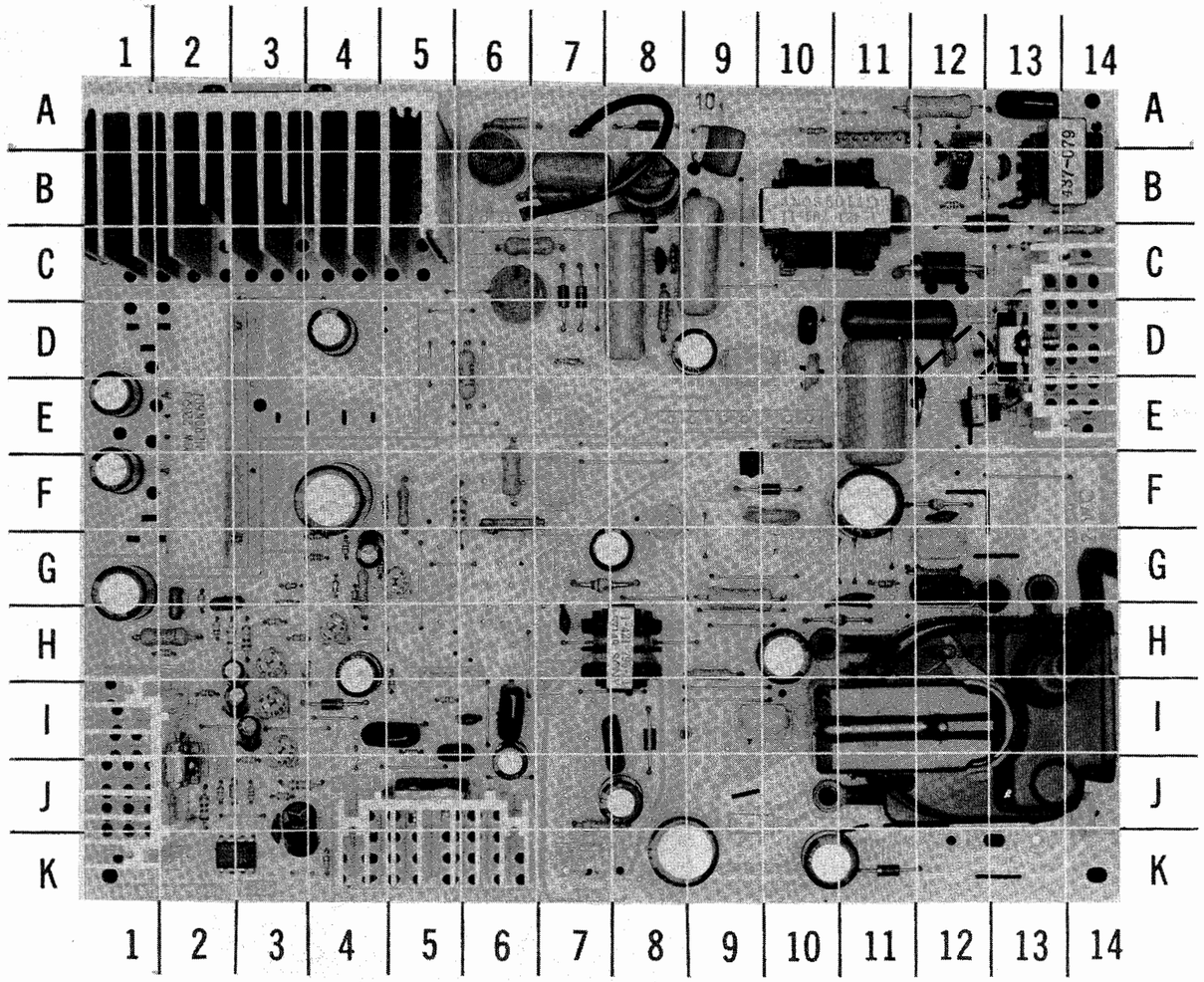
HIGH VOLTAGE SHUTDOWN TEST

Connect 120V AC to set, turn On and adjust for normal operation. Connect a variable DC supply from TP85 to ground. Slowly increase DC voltage to 22.6 volts. The set should go into shutdown and stay in shutdown. If the set does shut down, remove DC supply , turn Off, wait 15 seconds, turn set On and test for normal operation.

NOTE: If the set does not go into shutdown, refer to the "High Voltage Shutdown" section of this Troubleshooting guide.



CRT NECK ASSEMBLY



D BOARD

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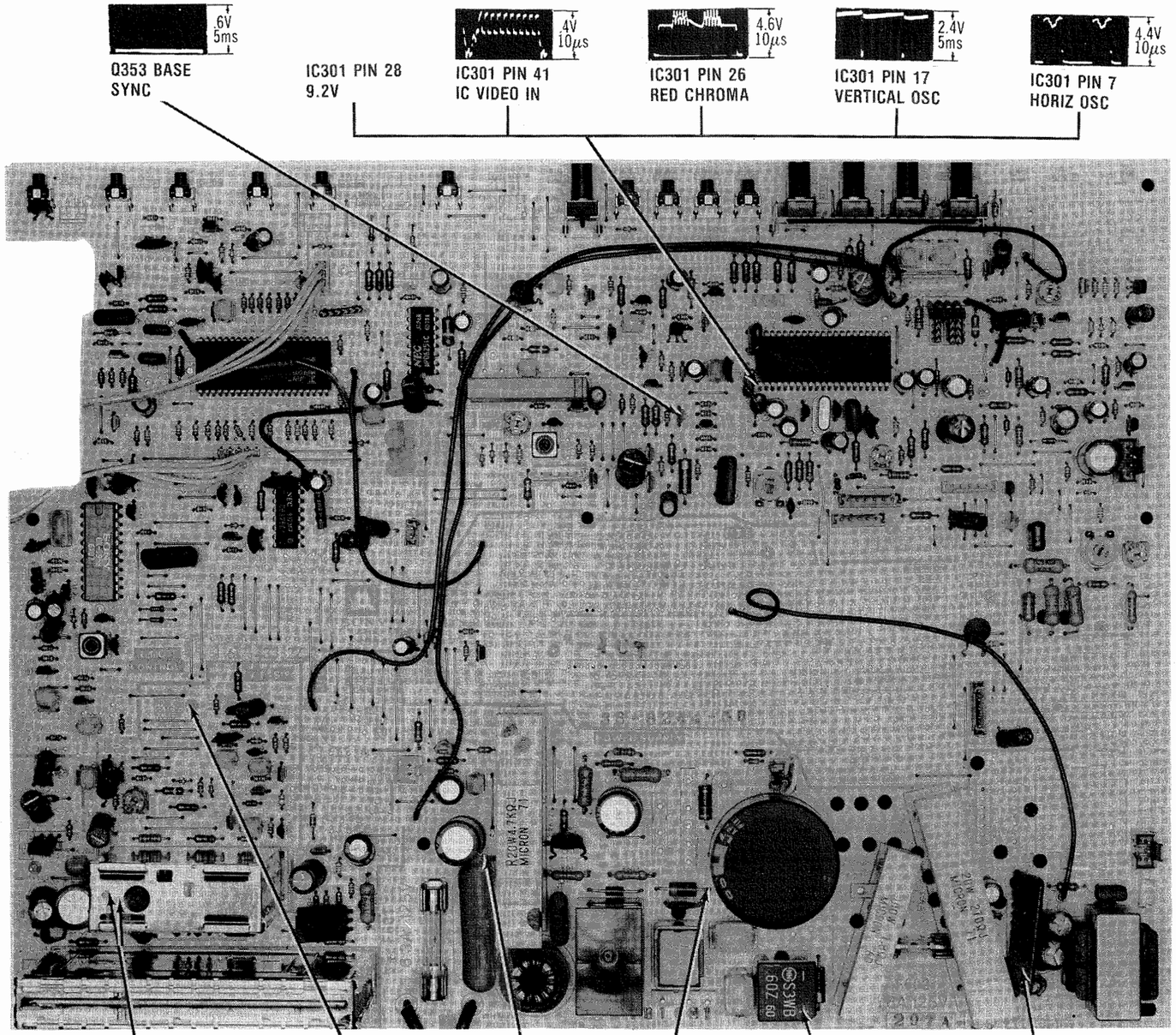
D BOARD-GridTrace LOCATION GUIDE

C651	F-1	D1520	H-11	R1568	G-4
C652	E-1	DY	E-9	R1569	G-11
C1501	I-6	IC651	A-3	R1570	A-6
C1502	I-6	IC1501	J-5	R1571	J-3
C1503	I-5	IC1502	K-2	R1575	H-3
C1504	I-5	L1502	J-14	R1576	F-6
C1505	H-4	L1504	F-8	RV1501	H-4
C1508	H-2	L1505	B-6	RV1502	H-3
C1509	K-3	L1506	C-6	RV1503	I-3
C1510	G-2	L1507	B-8	RV1504	I-3
C1511	G-2	L1509	D-9	RV1505	G-5
C1512	I-3	L1510	E-12	S1501	F-6
C1513	I-3	L1511	A-11	SG1501	A-8
C1514	F-4	L1512	G-12	T1502	H-8
C1515	G-4	L1513	I-10	T1504	B-14
C1517	J-8	L1514	F-7	T1505	I-12
C1518	C-12	NL1501	G-13	T1506	B-10
C1519	F-11	Q1501	J-2	TP91	E-7
C1520	H-7	Q1502	D-13		
C1521	G-8	Q1503	A-12		
C1524	K-10	R651	E-2		
C1525	G-12	R653	F-2		
C1527	F-10	R654	E-2		
C1528	B-9	R655	E-2		
C1529	F-11	R656	E-2		
C1530	C-9	R1501	G-3		
C1531	D-11	R1502	J-7		
C1532	G-1	R1503	I-6		
C1533	C-8	R1504	I-5		
C1534	D-9	R1505	I-5		
C1535	C-8	R1506	C-13		
C1536	B-7	R1508	F-5		
C1537	D-10	R1509	F-5		
C1538	D-10	R1510	J-3		
C1539	A-13	R1511	J-3		
C1540	B-13	R1512	J-2		
C1541	B-13	R1513	H-2		
C1542	B-12	R1514	G-2		
C1543	B-12	R1515	H-2		
C1544	D-4	R1516	H-2		
C1546	D-12	R1517	H-3		
C1547	J-6	R1518	I-2		
C1549	I-8	R1519	G-4		
C1550	K-8	R1520	G-4		
C1552	B-11	R1521	F-5		
C1554	G-11	R1522	G-4		
C1555	H-10	R1523	G-4		
C1557	J-3	R1524	H-2		
D1	D-5	R1525	G-12		
D2	I-5	R1526	H-9		
D3	A-11	R1531	E-10		
D4	K-7	R1534	B-7		
D5	J-9	R1535	C-7		
D6	G-10	R1536	A-10		
D7	B-7	R1537	C-8		
D8	I-9	R1538	D-8		
D651	A-2	R1540	C-14		
D1501	I-4	R1541	A-12		
D1502	I-8	R1542	B-12		
D1503	F-12	R1543	A-12		
D1504	G-7	R1544	B-12		
D1507	K-11	R1546	J-3		
D1509	F-10	R1547	I-5		
D1510	E-12	R1548	K-4		
D1511	E-11	R1550	J-2		
D1512	E-12	R1551	H-3		
D1513	A-8	R1552	D-7		
D1513	A-8	R1553	G-9		
D1514	C-7	R1554	D-6		
D1515	C-7	R1555	G-4		
D1516	G-4	R1556	G-4		
D1519	G-3	R1557	J-2		



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C BOARD-
GridTrace
LOCATION GUIDE

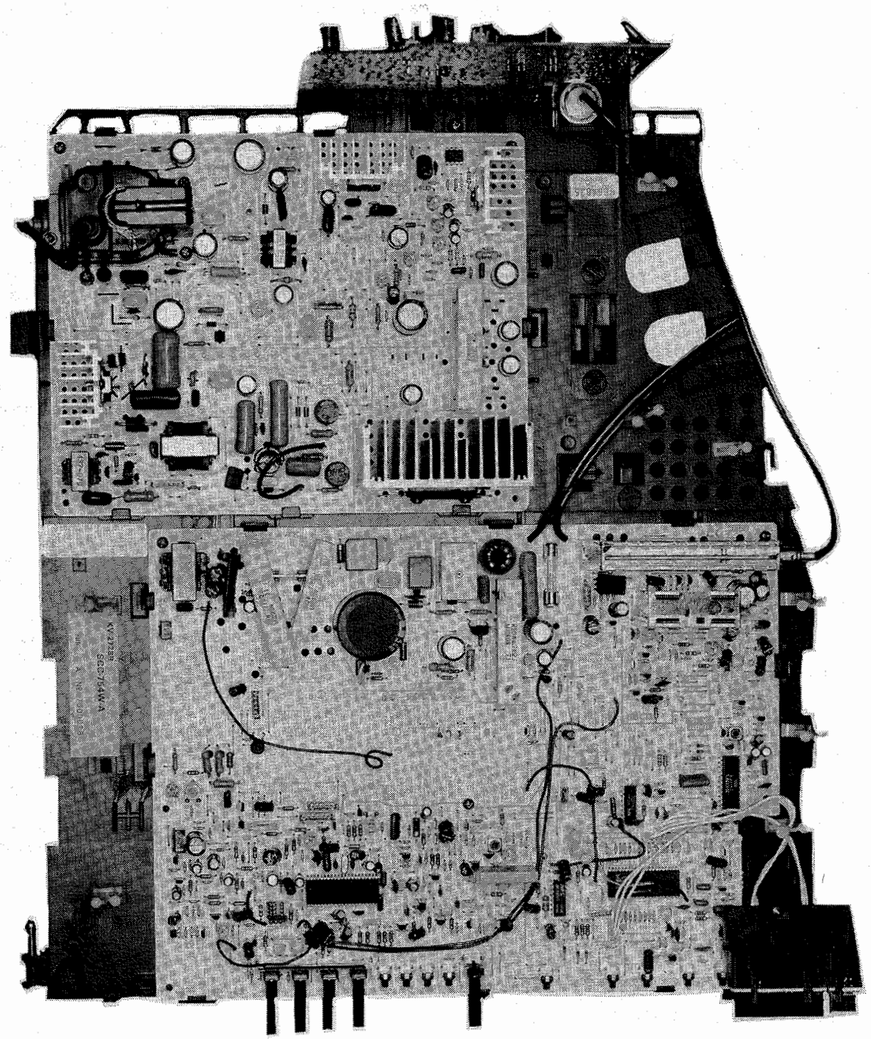
C1	M-5
C2	K-11
C3	C-1
C4	N-4
C701	N-6
C702	J-10
C704	K-10
C705	E-11
C706	E-9
C707	E-4
C708	B-11
C709	B-7
C710	A-4
C722	H-2
D701	F-11
D702	E-8
D703	D-3
L701	H-9
Q701	D-10
Q702	F-10
Q703	D-7
Q704	E-8
Q705	D-3
Q706	E-4
R701	L-6
R702	I-9
R703	H-8
R704	L-8
R705	K-8
R706	K-9
R707	I-2
R708	G-8
R709	F-6
R711	D-11
R712	C-5
R713	F-5
R714	H-9
R715	C-7
R716	C-10
R718	C-10
R719	C-9
R720	B-11
R722	F-9
R723	B-7
R725	C-5
R726	C-7
R727	C-8
R728	B-9
R729	D-2
R730	F-7
R732	B-4
R733	C-3
R734	B-5
R735	B-3
R737	E-6
R738	N-10
R739	M-10
R740	I-2
RV701	G-2
RV702	B-6
RV703	B-9
RV704	B-4
RV705	B-8
RV706	B-3
RV707	E-2
RV708	M-8

C BOARD

A Howard W. Sams GRIDTRACE™ Photo

A Howard W. Sams QUICK-CHECKS™ Photo

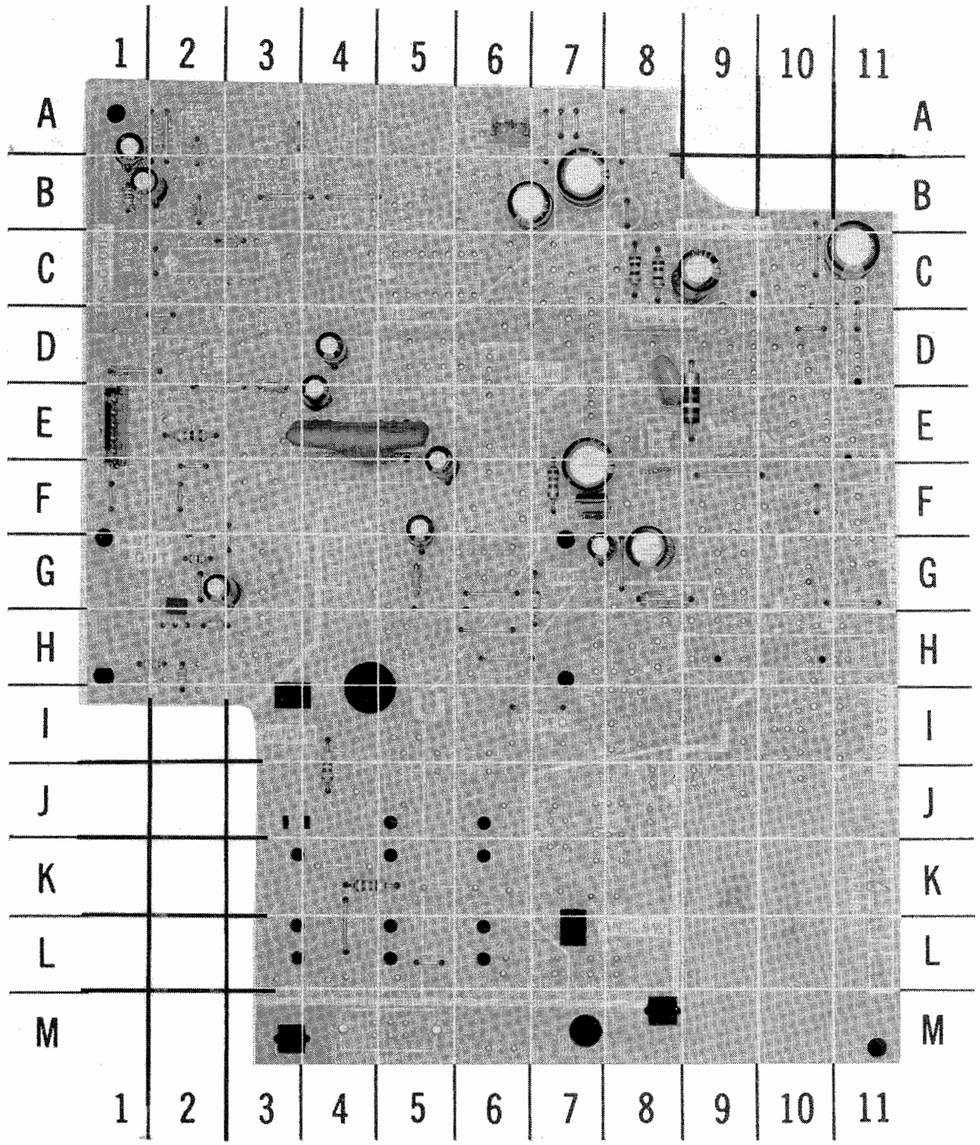
D BOARD



CHASSIS OVERALL

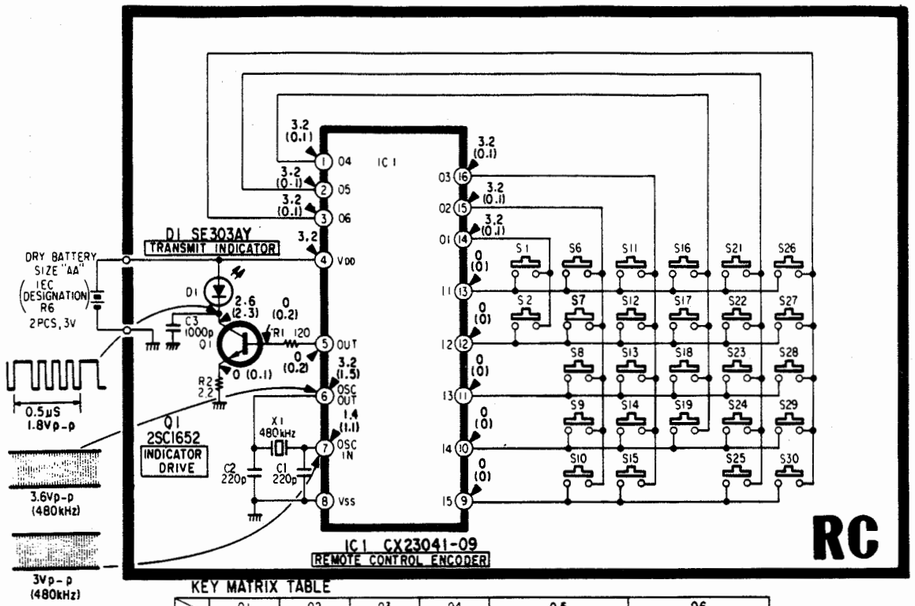
U BOARD-GridTrace LOCATION GUIDE

C1405	G-8	C1479	D-4	R1407	F-7	R1485	E-3
C1406	G-7	C1485	E-4	R1410	C-8	R1486	J-4
C1410	C-9	C1486	F-5	R1415	C-8	R1487	G-5
C1413	B-7	C1487	F-5	R1460	H-2	R1498	K-4
C1423	C-11	C1499	D-8	R1462	G-2	R1499	E-9
C1425	F-7	D1402	G-7	R1464	H-2	U1	E-8
C1439	B-6	IC1407	E-4	R1465	H-2	U2	D-8
C1461	G-2	Q1402	F-7	R1468	B-1	U3	A-6
C1468	A-1	Q1409	G-2	R1479	E-2	U4	E-1
C1474	B-1						



A Howard W. Sams GRIDTRACE™ Photo

U BOARD



KEY MATRIX TABLE

	01	02	03	04	05	06
I1	S1 CH +	S6 0	S11 7	S16 4	S21 1	S26 MUTING
I2	S2 CH −	S7 JUMP	S12 8	S17 5	S22 2	S27 SLEEP
I3		S8 ENTER	S13 9	S18 6	S23 3	S28 POWER
I4		S9 VOL −	S14 VOL +	S19 PIC −	S24 PIC +	S29 DISPLAY
I5		S10 CLEAR	S15 AM/PM		S25 TIMER OFF REPEAT	S30 TIMER/BLOCK

Ref.No.	Part No.	Description			
	*1-616-584-11	RC BOARD ********			
	4-350-924-00	TERMINAL (B), BATTERY			
	4-372-835-01	TERMINAL (A), BATTERY			
		CAPACITOR			
C1	1-102-110-00	CERAMIC	220PF	10%	50V
C2	1-102-110-00	CERAMIC	220PF	10%	50V
		DIODE			
D1	8-719-107-82	DIODE SE303AY			
		IC			
IC1	8-759-920-81	IC CX23041-09			
		TRANSISTOR			
Q1	8-729-965-22	TRANSISTOR 2SC1652			
		RESISTOR			
R1	1-249-406-11	CARBON	120	5%	1/6W
R2	1-249-385-11	CARBON	2.2	5%	1/6W
		CRYSTAL			
X1	1-527-476-00	OSCILLATOR, CERAMIC			

Courtesy of Manufacturer

TROUBLESHOOTING

AUDIO

Inject an audio signal at pin 8 of IF Block (IFB-450) and check for audio at speaker. If there is no audio at speaker, check voltages, waveforms and components associated with RF Amp IC (IC813). If there is no audio at speaker, inject an audio signal at pin 9 of the IF Block with volume at Maximum and check for audio at speaker. If there is no audio, check the voltage at pin 7 of IF Block. It should measure 0V at mute and 6.8V at Maximum volume. If this voltage does not change, check the D/A Converter IC (IC104). If the voltage does change at pin 7 of IF Block, inject an audio signal at pin 10 of IF Block and check for On audio waveform at pin 9 of IF Block, check voltages, waveforms and components associated with MPX Buffer Transistor (Q207).

VIDEO

Inject a video signal at TP12 and check for video on CRT. If video is present, refer to "IF-AGC" section of this Troubleshooting guide. If there is no video, check for a video waveform at base of Video Buffer Transistor (Q358). If there is no video, check voltages, waveforms and components associated with Video Transistors (Q203, Q204, Q205 and Q206) and Hookup 1 Transistor (Q202). If video is present at base of Transistor Q358, check for a video waveform at pins 41 and 42 of Y/Chroma/Jungle IC (IC301). If there is no video, check voltages, waveforms and components associated with Transistors Q348 and Q350 thru Q359 and pins 41 and 42 of IC301. If a video waveform is present at pins 41 and 42 of IC301, check for video at pins 24, 25 and 26 of IC301. If there is no video, check voltages, waveforms and components associated with pins 24 thru 30, 32, 36, 37 and 40 of IC301. If video is present at pins 24, 25 and 26 of IC301, check CRT, Transistors Q701 thru Q706 and associated components.

VERTICAL

Inject a vertical drive signal at pin 17 of Y/Chroma/Jungle IC (IC301). If vertical deflection is now present, check voltages, waveforms and components associated with pins 1, 16, 17 and 19 of IC301. If there is still no vertical sweep, check voltages, waveforms and components associated with Vertical Output IC (IC1501), Pincushion Modulator IC (IC1502) and (IC1502) and Deflection Yoke (DY1). If vertical oscillator is off frequency, check voltages, waveforms and components associated with pin 16 of IC301. Vertical linearity or foldover problems may be caused by vertical feedback and bias circuits, check Electrolytics C514, C1505, C1508 and C1509 for defects.

SYNC

Check for a video waveform at pin 42 of Y/Chroma/Jungle IC (IC301). If the waveform is missing, check voltages, waveforms and components associated with pin 16 of IC301. If a video waveform is present at pin 42 and there is no vertical or horizontal sync, IC301 may be defective. Check the adjustment of both vertical and horizontal frequency controls.

RASTER

Check CRT and CRT voltages. If there is no red, check voltages, waveforms and components associated with pin 26 of Y/Chroma/ Jungle IC (IC301), Red Drive and Output Transistors (Q705 and Q706). If there is no green, check voltages, waveforms and components associated with pin 25 of IC301, Green Drive and Output Transistors (Q703 and Q704). If there is no blue, check voltages, waveforms and components associated with pin 24 of IC301, Blue Drive and Output Transistors (Q701 and Q702). If the raster is pincushion Shaped, check Pincushion Modulator IC (IC1502) and associated components. If the raster has a keystone shape, check Deflection Yoke (DY1). If the raster has height or width problems, refer to "Vertical", "Horizontal" and "Power Supply" sections of this Troubleshooting guide.

CHROMA

Check for a chroma waveform at pin 39 of Y/Chroma/Jungle IC (IC301). If this waveform is missing, check voltages, waveforms and components associated with pin 39. If a chroma waveform is present at pin 39 of IC301, check for the proper chroma waveforms at pins 24, 25 and 26 of IC301. If these waveforms are missing, check voltages, waveforms and components associated with pins 9, 33, 34 and 36 of IC301. If there is inadequate color range, check voltages and components associated with pin 34 of Color Control. Check the 3.58MHz oscillator at pin 9 of voltages, components associated with pin 33 of IC301 and Hue Control (RV301). If the proper chroma waveforms are present at pins 24, 25 and 26, refer to "Raster" section of this Troubleshooting guide.

TEST JIG HOOKUP

FUNCTION	Chek-A-Color ADAPTER NO.	RCA / TeleMatic ADAPTER NO.	
CRT YOKE YOKE SETTING	D4137(1) YP1A Focus Tap	10J766 10J733 Horiz 1.2, Vert 8.0 FVS-3950 Focus Voltage Supply	

	PIN 1 or 2	PIN 3 or 4	PIN 5	PIN 6
(1)	RED	BLUE	YELLOW	GREEN

(P.C. Board)

TROUBLESHOOTING

POWER SUPPLY

Check AC Fuse (F601) and DC Fuse (F602. If F601 is open, Check Bridge Rectifier Diode (D601), Capacitor C601 and Thermistor THP601. If F602 is open, check Horizontal Output Transistor (Q1502) and Regulator IC (IC651). Apply 120V AC, depress Power Switch (S001) and check for 157V at the cathode of D601. If this voltage is missing, check voltages and components associated with Relay (RY601) and Relay Drive Transistor (Q601). If 157V is present at the cathode of D601, check for 135V at TP91. If this voltage is missing, check voltages, waveforms and components associated with IC651 and Transistor Q1502. If voltage at TP91 is 166V the TV may be in shutdown, refer to "Horizontal" and "High Voltage Shutdown" section of this Troubleshooting guide.

HORIZONTAL

Determine if TV is in shutdown, refer to "High Voltage Shutdown" section of this Troubleshooting guide. If TV is not in shutdown, inject a horizontal signal at base of Horizontal Output Transistor (Q1502). If horizontal deflection is now present, check voltages, waveforms and components associated with pins 1 thru 8, 11, 12, 13, 14 and 15 of Y/Chroma/Jungle IC (IC301) and Horizontal Drive Transistor (Q1503). If there is still no horizontal sweep, check voltages, waveforms and components associated with Transistor Q1502 and Horizontal Transformer (T1505). Check Diodes D1503, D1504, D1507 and D1509 and associated components for defects. The High Voltage Rectifier is part of Transformer T1505 and if defective will affect the operation of horizontal circuits. If Horizontal Oscillator is off frequency, check voltages, waveforms and components associated with pins 1, 2 and 4 of IC301. Horizontal linearity or width problems may be caused by Capacitors C1535, C1536, C1537, C1538 and C1546.

IF-AGC

Inject a video IF signal at IF input and check for video on CRT. If video is present, check Tuner, Tuner Control and Tuner AFT circuits. If there is no video on CRT, check for a video waveform at TP12. If video is present, refer to "Video" section of this Troubleshooting guide. If there is no video at TP12, check Detector Output Transistor (Q203), IF Block (IFB-450) and associated components for defects. Check for proper voltages and waveforms at pins 1 thru 6, 11 and 12 of IF Block.

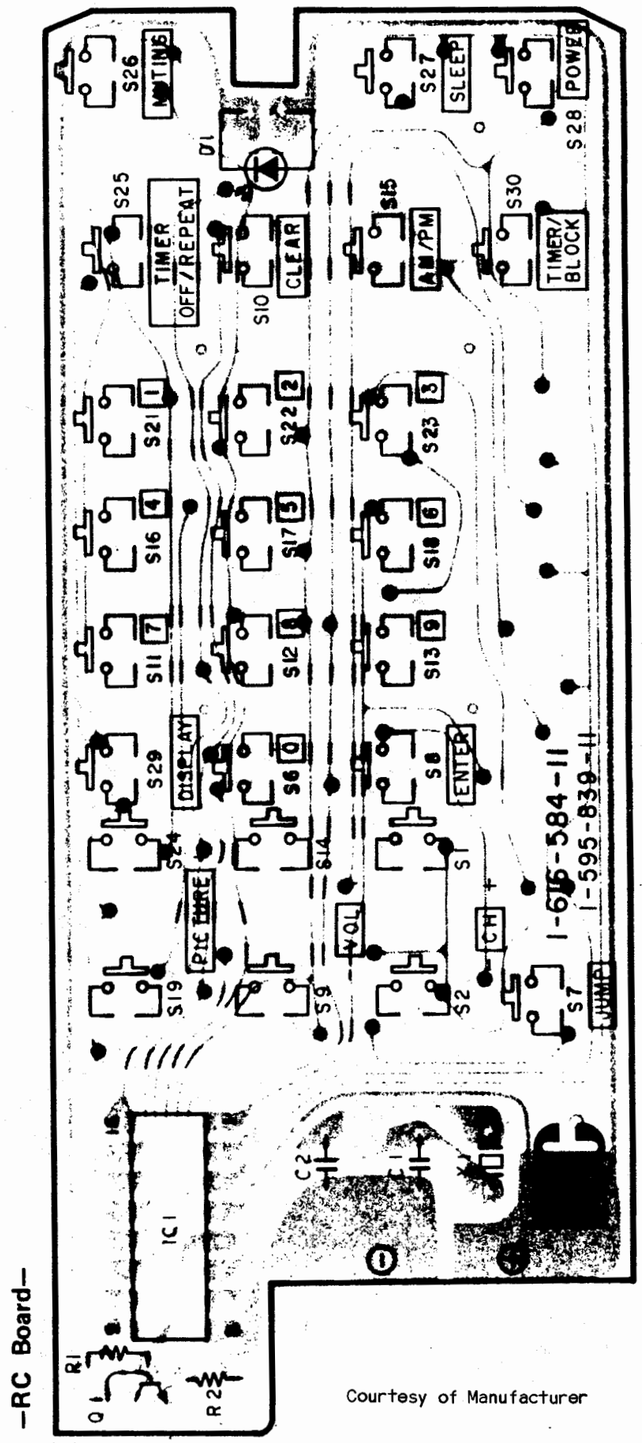
HIGH VOLTAGE SHUTDOWN

The high voltage is monitored by applying the DC voltage developed at TP85 to base of X-Ray Protect Transistor (Q504). Should high voltage increase, the voltage at TP85 will also increase and trigger Transistor Q504 into conduction, increasing the conduction of Q505 X-Ray Protect Transistor (Q505) and as a result its emitter voltage is increased. This increased voltage is applied to High Voltage Shutdown circuit at pin 12 of of Y/Chroma Jungler IC (IC301), shutting down the set. To troubleshoot, disconnect Resistor R533 and use a variac for AC power. Start at 95V AC and increase as necessary to locate defeat. Return R533 to set.

NOTE: Care should be taken in defeating the High Voltage Shutdown circuit as this may cause excessive x-ray radiation and damage to the CRT and Horizontal Output Transformer (T1505). Monitor the high voltage and troubleshoot.

Voltages Taken in Shutdown

TP91	IC301	
165V	Pin 4	7.2V
	Pin 6	5.9V
	Pin 12	.67V

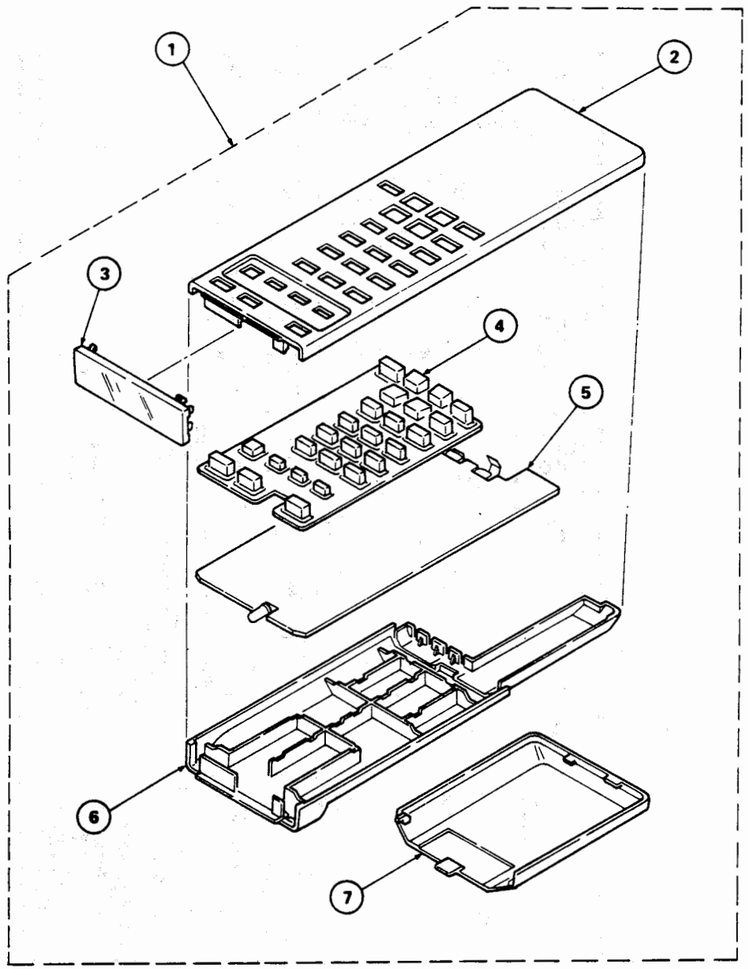


Courtesy of Manufacturer

REMOTE CONTROL TRANSMITTER

EXPLODED VIEW

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



No.	Part No.	Description	Remark
1	*A-1470-792-A	COMMANDER ASSY (RM-746)	2-7
2	X-4379-189-1	CASE ASSY, UPPER	
3	4-373-819-01	PLATE, FROSTED	
4	4-376-972-21	SHEET, SILICONE RUBBER	
5	*1-616-584-11	RC BOARD	
6	4-373-824-11	CASE, LOWER	
7	4-373-821-11	COVER, BATTERY	

REMOTE CONTROL TRANSMITTER Courtesy of Manufacturer

TROUBLESHOOTING AID

Note: Waveforms taken with triggered scope, Keyed-Rainbow generator. Schematic voltages measured with digital meter, no signal. Controls adjusted for normal operation.

PICTURE or SOUND

NO PIC, NO SOUND, NO RASTER: Check AC power supply and sources generated from Horizontal Output Transformer (T1505). Refer to "Troubleshooting" Power Supply and Horizontal circuits.

NO PIC, NO SOUND, HAS RASTER: Check IF-AGC and source voltages from Horizontal Output Transformer (T1505). Refer to "Troubleshooting" IF-AGC and Horizontal circuits.

NO PIC, HAS SOUND, NO RASTER: Check Horizontal Output Transformer (T1505) sources and Video circuit. Refer to "Troubleshooting" Horizontal and Video circuits.

NO PIC, HAS SOUND, HAS RASTER: Refer to "Troubleshooting" Video circuit.

HAS PIC, NO SOUND: Refer to "Troubleshooting" Audio circuit.

OVERLOADED PICTURE: Refer to "Troubleshooting" IF-AGC circuit.

LOW OR EXCESSIVE BRIGHTNESS: Check Video and Luminance circuits. Refer to "Troubleshooting" Video circuit.

SWEEP

NO RASTER, HAS SOUND: Check HV rectifier, Part of Horizontal Output Transformer (T1505). Refer to "Troubleshooting" Horizontal circuit.

NO RASTER, NO SOUND: Refer to "Troubleshooting" Horizontal circuit.

NO VERT DEFLECTION: Refer to "Troubleshooting" Vertical circuit.

POOR VERT LIN OR FOLDOVER: Refer to "Troubleshooting" Vertical circuit.

POOR HORIZ LIN OR FOLDOVER: Refer to "Troubleshooting" Horizontal circuit.

NARROW PICTURE: Refer to "Troubleshooting" Horizontal circuit.

VERT OFF FREQUENCY: Refer to "Troubleshooting" Vertical circuit.

HORIZ OFF FREQUENCY: Refer to "Troubleshooting" Horizontal circuit.

SYNC

NO VERT/HORIZ SYNC: Refer to "Troubleshooting" Sync circuit.

RASTER

YELLOW (NO BLUE): Check Chroma and Blue Output circuits. Refer to "Troubleshooting" Raster circuit.

CYAN (NO RED): Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

MAGENTA (NO GREEN): Check Chroma and Green Output circuits. Refer to "Troubleshooting" Raster circuit.

COLOR (B/W operating normally)

NO COLOR: Refer to "Troubleshooting" Chroma circuit.

WEAK COLOR: Refer to "Troubleshooting" Chroma circuit.

NO COLOR SYNC: Refer to "Troubleshooting" Chroma circuit.

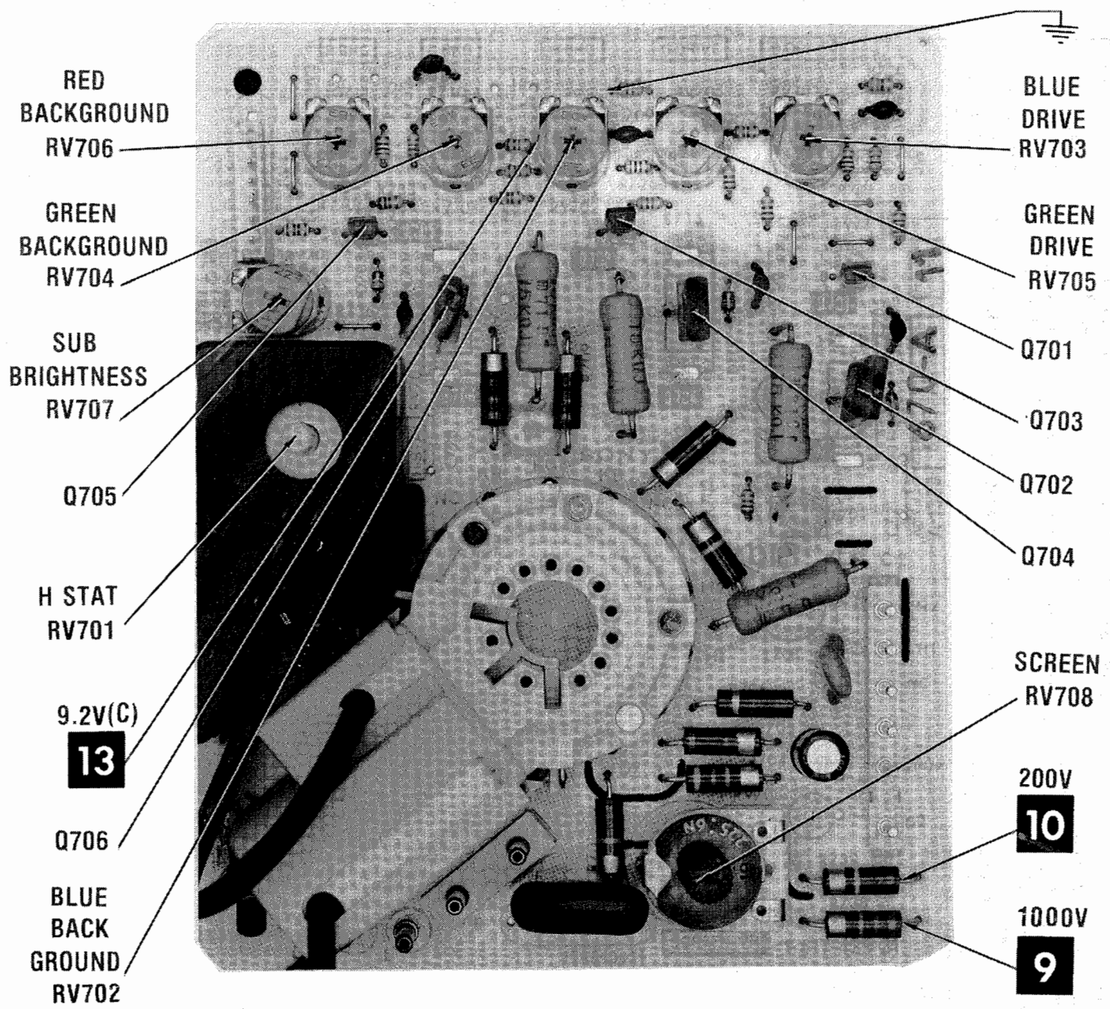
NO GREEN: Check Chroma and Green Output circuits. Refer to "Troubleshooting" Raster circuit.

NO BLUE: Check Chroma and Blue Output circuits. Refer to "Troubleshooting" Raster circuit.

NO RED: Check Chroma and Red Output circuits. Refer to "Troubleshooting" Raster circuit.

INCORRECT HUE (TINT): Refer to "Troubleshooting" Chroma circuit.

C BOARD



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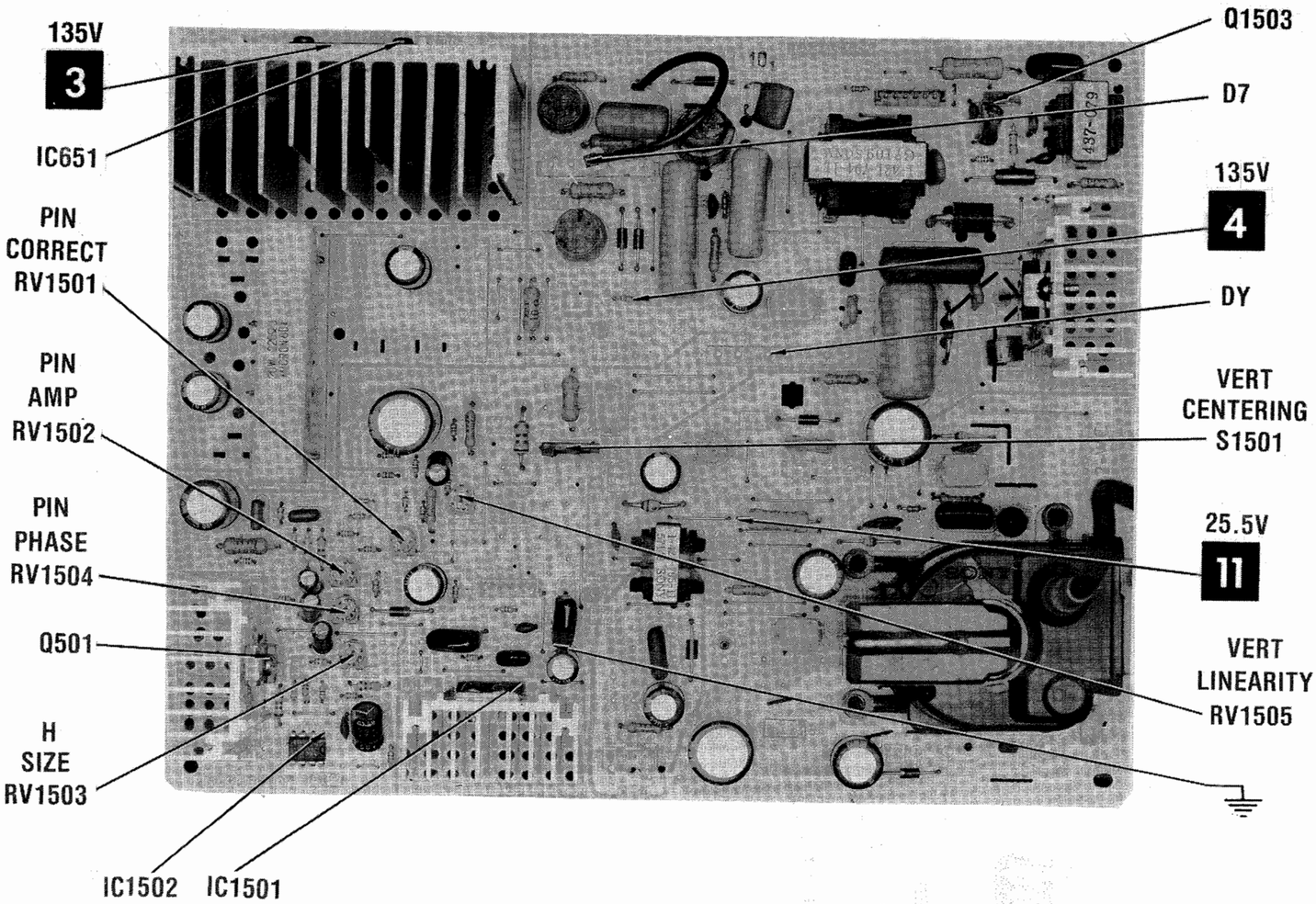

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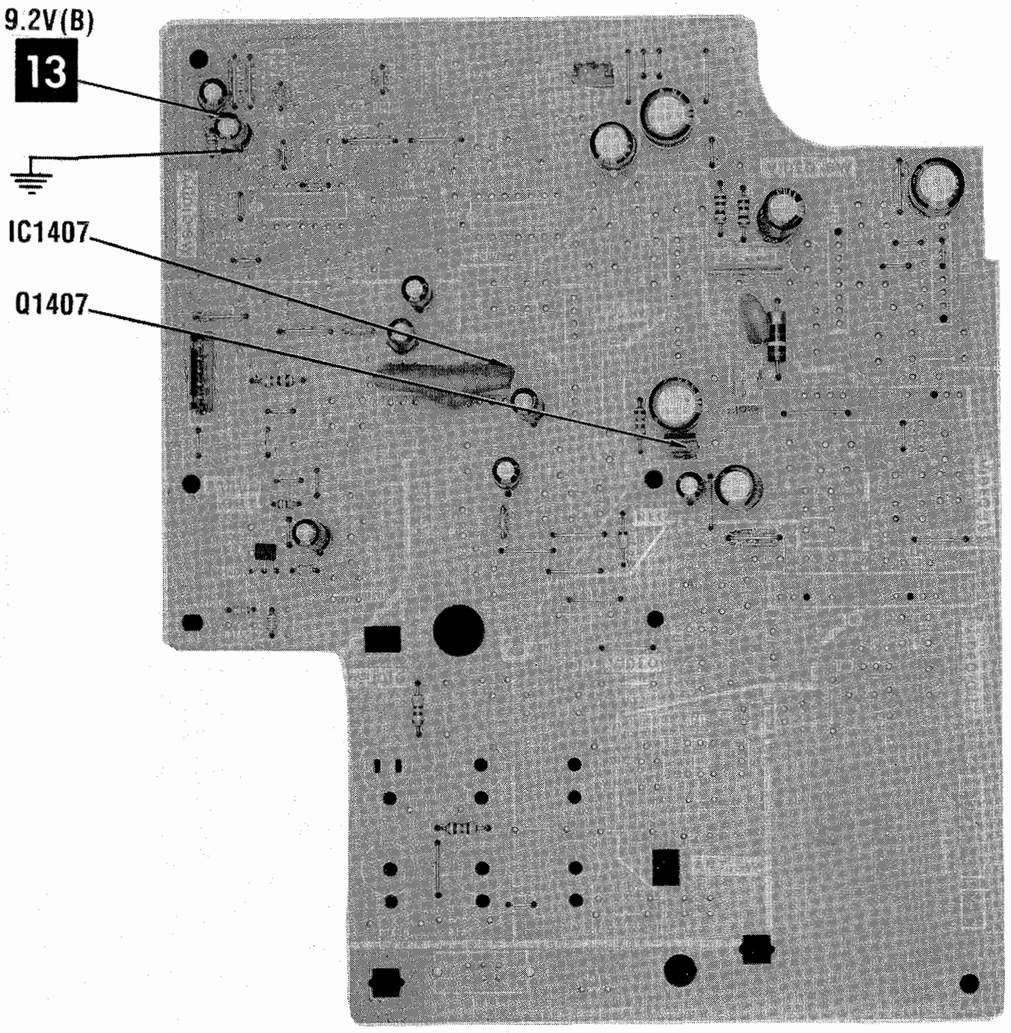
D BOARD



U BOARD

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PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	PART No.	PART No.	PART No.
MODEL	KV-2725R	KV-2726R	KV-2728R	KV-2729R
Cabinet Assembly	X-4379-188-2	X-4379-188-1	X-4379-182-2	X-4379-126-3
Cabinet Assembly (OAK)			X-4379-182-3	
Cabinet Assembly (ROSEWOOD)				X-4379-188-3
Cabinet, Rear Cover	4-377-108-51	4-377-108-51	4-377-108-51	4-377-108-51
Bezel Assembly (OAK)			X-4379-125-2	
Bezel Assembly (ROSEWOOD)				X-4379-125-3
Control Panel Assembly	X-4379-191-2	X-4379-187-1	X-4379-187-2	
Control Panel Assembly (OAK)				X-4379-191-1
Control Panel Assembly (ROSEWOOD)				X-4379-191-3
Door Assembly Control	X-4379-190-2	X-4379-171-2	X-4379-171-3	
Door Assembly Control (OAK)				X-4379-190-1
Door Assembly Control (ROSEWOOD)				X-4379-190-3
Foot Assembly	X-4378-207-0	X-4338-207-0	X-4338-207-0	X-4338-207-0
LEG	4-376-990-01	4-376-990-01	4-376-990-01	4-376-990-01

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

COILS & TRANSFORMERS

	ITEM No.	FUNCTION	MFGR. PART No.	OTHER IDENTIFICATION	NOTES
#	DY1	Yoke Horiz 827mH 110° Vert 21.6mH	1-451-275-11		
#	T801	Sound Output	1-427-462-00	427-462(1)	
#	T1502	Isolator	1-421-795-11		
	T1504	Horizontal Drive	1-437-079-00	437-049(1)	
#	T1505	Horizontal Output	1-439-372-12		
#	T1506	PMT	1-421-794-11		

For SAFETY use only equivalent replacement part.
(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP901	2 1/4" X 5" PM 8 Ohms	1-503-476-11 1-503-476-21(1)		5 Watts

MISCELLANEOUS

	ITEM No.	PART NAME	MFGR. PART No.	NOTES
#	F601	Fuse	1-532-509-11	6.3 Amp @ 125V AC Slow Blow
#	F602	Fuse	1-532-742-11	1.6 Amp @ 125V AC Slow Blow
#	L901	Degaussing Coil	1-426-248-21	
#	NL1501	Neon Lamp	1-519-237-11	
#	P900	Cord	1-557-269-11	AC Power, Polarized
#	RY601	Relay	1-515-573-11	Power
#	S001	Switch	1-554-804-12	Power
	S002 thru S007A	Switch	1-554-804-11	Channel/Volume/Video/VIP
	S050	Switch	1-554-804-11	ERASE
	S051	Switch	1-554-804-11	Picture Up
	S052	Switch	1-554-804-11	Picture Down
	S059	Switch	1-554-804-11	ADD
	S061	Switch	1-570-240-11	
	S1501	Switch	1-554-186-00	Lever
	SG1501	Spark Gap	1-519-063-XX	
#	TU101	Tuner	1-463-603-11	
#	V901	CRT	A68JMT50X	
	X1	Oscillator	1-527-476-41	Remote Transmitter
	X301	Crystal	1-557-396-00	3.58MHz
		Antenna		UHF/VHF RUSSELL Antenna BEA-1H.
#		Antenna Terminal Board	1-537-065-11	
		Magnet Disk	1-452-032-00	10(MM) Convergence
		Magnet Disk	1-452-094-00	15(MM) Convergence, Rotatable Disk
		PC Board	A-1296-297-A	A Board
		PC Board	A-1330-670-A	C Board
		PC Board	A-1345-584-A	D Board
		PC Board	1-617-431-21	T1 Board
		PC Board	1-617-432-21	T2 Board
		PC Board	A-1394-120-A	U1 Board

For SAFETY use only equivalent replacement part.

PARTS LIST AND DESCRIPTION

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
D051,54	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D101	RD33E-B2	NTE5036A	ECG5036A	SK33A/5036A	103-Z9004	
	8-719-101-04	NTE5036A	ECG5036A	SK33A/5036A	103-Z9004	
D102,3,4	1S1555	NTE177	ECG177	SK9091/177	103-131	
	8-719-815-55	NTE177	ECG177	SK9091/177	103-131	
	1S1555TP3	NTE177	ECG177	SK9091/177	103-131	
D105	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D106	RD5.6E-N2	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
	8-719-102-71	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
D107,8,9	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D112,113	1S1555	NTE177	ECG177	SK9091/177	103-131	
	8-719-815-55	NTE177	ECG177	SK9091/177	103-131	
	1S1555TP3	NTE177	ECG177	SK9091/177	103-131	
D201,2	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D301,2,3	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D304	RD5.6E-N2	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
	8-719-102-71	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
D305	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D306	RD5.6E-L2	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
	8-719-101-58	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
D307	1S1555	NTE177	ECG177	SK9091/177	103-131	
	8-719-815-55	NTE177	ECG177	SK9091/177	103-131	
	1S1555TP3	NTE177	ECG177	SK9091/177	103-131	
D308	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519		
D501	RD6.2E-N2	NTE5013A	ECG5013A	SK6A2/5013A	103-Z9008	
	8-719-102-74	NTE5013A	ECG5013A	SK6A2/5013A	103-Z9008	
D503	RD5.6E-N2	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
	8-719-102-71	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
D504	RD24E-BZ7	NTE5031A	ECG5031A	SK24A/5031A	103-212	
	8-719-190-00	NTE5031A	ECG5031A	SK24A/5031A	103-212	
	RD24EB-Z7	NTE5031A	ECG5031A	SK24A/5031A	103-212	
D505	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D510	RD5.6E-B2	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
	8-719-100-35	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
	RD5.6EB-Z7S	NTE5011A	ECG5011A	SK5A6/5011A	103-Z9007	
D601	S3WB60Z	NTE5310	ECG5310	SK5030/5310		
	8-719-503-06	NTE5310	ECG5310	SK5030/5310		
D602	S1B01-02	NTE116	ECG116	SK3311	212-76-02	
	U05G	NTE5806	ECG5806	SK3848/5806	212-Z9000	
	8-719-911-55	NTE5804	ECG5804	SK9007/5804	212-Z9000	
D603,4	U05E	NTE5804	ECG5804	SK9007/5804	212-Z9000	
	U05G	NTE5806	ECG5806	SK3848/5806	212-Z9000	
	8-719-911-55	NTE5804	ECG5804	SK9007/5804	212-Z9000	
D605	RD5.1E-N2	NTE5010A	ECG5010A	SK5A1/5010A	103-279-10	
	8-719-102-68	NTE5010A	ECG5010A	SK5A1/5010A	103-279-10	
D606	ERC24-06S	NTE552	ECG552	SK9000/552	103-287	
	8-719-924-06	NTE552	ECG552	SK9000/552	103-287	
	S1B01-04	NTE5806	ECG5806	SK3848/5806	212-Z9000	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA MFGR. PART No.	NTE PART No.	
R1513	10 5% 2W Nonflammable Metal Oxide Film	1-215-880-00	2W010	
R1519	.82 5% 1W Nonflammable Metal Oxide Film	1-216-348-00	1WD82	
# R1525	1.2 5% 1/4W Nonflammable Carbon Film	1-246-997-11	QW1D2	
# R1526	.47 5% 1W Nonflammable Metal Oxide Film	1-216-345-51	1WD47	
# R1531	1800 5% 1W Nonflammable Metal Oxide Film	1-216-434-51	1W218	
R1534	82 5% 2W Nonflammable Metal Oixde Film	1-216-450-00	2W082	
R1535	82 5% 2W Nonflammable Metal Oxide Film	1-216-450-00	2W082	
R1536	270 5% 1/2W Nonflammable Carbon Film	1-247-410-11		
R1537	680 5% 1/6W Nonflammable Carbon Film	1-247-415-11		
# R1538	100 5% 1W Nonflammable Metal Oxide Film	1-215-863-51	1W110	
R1540	.47 5% 1W Nonflammable Metal Oxide Film	1-216-345-11	1WD47	
R1541	1500 5% 3W Nonflammable Metal Oxide Film	1-215-918-00	3W215	
R1542	5600 5% 1/4W Nonflammable Carbon	1-247-722-11	QW356	
R1548A	680 5% 1/6W Nonflammable Carbon Film	1-249-415-11		
# R1552	4.7 5% 1/6W Nonflammable Carbon Film	1-249-389-51		
R1553	2.7 5% 2W Nonflammable Metal Oxide	1-216-374-00	2W2D7	
R1554	10 5% 2W Nonflammable Metal Oxide Film	1-215-880-00	2W010	
R1557	1000 5% 1/6W Nonflammable Carbon Film	1-249-417-11		
# R1569	27 5% 1/6W Nonflammable Carbon Film	1-249-398-51		
R1570	33 5% 1W Nonflammable Metal Oxide Film	1-215-860-11	1W033	
# R1571	3300 5% 1/4W Carbon Film		QW233	
R1575	680 5% 1/6W Nonflammable Carbon Film	1-249-415-11		
# R1576	2.2 5% 2W Nonflammable Metal Oxide	1-216-373-51	2W2D2	
TH301	7020 Cold NTC	1-800-945-00		
# THP601	7.2 Tap 130 Cold PTC	1-806-214-11		

For SAFETY use only equivalent replacement part.

COILS (RF-IF)

ITEM No.	FUNCTION	MFGR. PART No.
DL351	Delay Line	1-415-470-11
L101	RF Choke (4.7uH)	1-408-405-00
L102	RF Choke (82uH)	1-408-420-00
L103	Indicator Bar	1-404-538-11
L104	RF Choke (1mH)	1-407-717-00
L105	RF Choke (3.9uH)	1-408-437-31
L106	RF Choke (3.9uH)	1-408-437-31
L107	RF Choke (15uH)	1-408-444-31
L108	RF Choke (15uH)	1-408-444-31
L109	RF Choke (3.9uH)	1-408-437-31
L200	RF Choke (8.2uH)	1-408-441-31
L201	RF Choke (10uH)	1-408-409-00
L202	RF Choke (100uH)	1-408-421-00
L204	RF Choke (33uH)	1-408-415-00
L303	RF Choke (47uH)	1-408-417-00
L350	Peaking (180uH)	1-408-424-00
L351	Comb Filter	1-404-607-11
L352	RF Choke (27uH)	1-408-414-00

ITEM No.	FUNCTION	MFGR. PART No.
L353	RF Choke (18uH)	1-408-412-00
# L601	RF Choke (3.3uH)	1-408-225-11
# L603	RF Choke (3.3uH)	1-408-225-11
L603	RF Choke (1.2uH)	1-408-398-00
L701	RF Choke (47uH)	1-408-450-31
# L1502	RF Choke (10uH)	1-407-693-11
L1504	RF Choke	1-459-313-00
L1505	RF Choke	1-459-104-00
L1506	Peaking	1-459-075-00
# L1507	Linearity	1-459-224-13
L1509	RF Choke (4.7mH)	1-408-239-00
L1510	RF Choke	1-407-365-00
L1511	Peaking	1-408-349-00
# L1512	RF Choke (82uH)	1-408-226-11
# L1513	RF Choke (22uH)	1-408-938-11
L1514	Peaking (3.3uH)	1-408-225-00
# T501	AC Line Choke	1-421-357-31

For SAFETY use only equivalent replacement part.

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

RESISTORS (Power and Special)

	ITEM No.	RATING	REPLACEMENT DATA		
			MFGR. PART No.	NTE PART No.	
	CP101	Resistor Network			
	CP102	Resistor Network			
	CP303	Resistor Network			
	R101	10K 5% 1/6W Nonflammable Metal Oxide	1-215-898-11	2W310	
	R204	33K 1% 1/6W Metal Film	1-215-457-00		
	R205	33K 1% 1/4W Metal Film	1-214-765-00		
	R301	47K 1% 1/6W Metal Film	1-215-461-00		
	R306	6200 1% 1/4W Metal Film	1-214-748-00		
	R376	150K 1% 1/6W Metal Film	1-215-473-00		
	R378	10K 1% 1/6W Metal Film	1-215-445-00		
#	R379	680K 5% 1/4W Metal Film		QW468	
#	R380	33K 5% 1/4W Metal Film		QW333	
	R505	18 5% 2W Metal Oxide Film	1-216-446-00	2W018	
	R512	300K 1% 1/6W Metal Film	1-215-480-00		
#	R513	5600 5% 1/4W Metal Film		QW256	
	R514	5100 1% 1/6W Metal Film	1-215-438-00		
	R517	10K 1% 1/6W Metal Film	1-215-445-00		
	R519	2400 1% 1/6W Metal Film	1-215-430-00		
	R526	15K 5% 2W Nonflammable Metal Oxide Film	1-215-899-11	QW315	
	R529	6800 1% 1/6W Metal Film	1-215-441-00		
	R532	100K 1% 1/4W Metal Film	1-214-777-00		
	R537	75K 1% 1/4W Metal Film	1-214-774-00		
	R539	3900 5% 2W Nonflammable	1-216-460-11	2W239	
#	R540	470 5% 1/6W Nonflammable Carbon Film	1-219-413-51		
	R544	3900 5% 2W Nonflammable Metal Oxide Film	1-216-460-11	2W239	
#	R545	4700 5% 1/4W Carbon Film		QW247	
	R546	33K 5% 1W Nonflammable Metal Oxide Film	1-215-878-00	1W333	
#	R551	4700 5% 1/6W Nonflammable Carbon Film	1-249-425-51		
	R552	6800 1% 1/6W Metal Film	1-215-441-00		
	R559	220K 1% 1/4W Metal Film	1-214-785-00		
#	R601	1M 10% 1/2W Carbon Film	1-202-719-51	HW510	
#	R602	1.8 5% 10W WW	1-205-792-11	10W1D8	
#	R603	560 5% 1W Nonflammable Metal Oxide Film	1-216-431-51	1W156	
	R604	4700 5% 2W Nonflammable Metal Oxide Film	1-215-896-00	2W247	
#	R605	270 5% 20W WW Nonflammable WW	1-205-799-11		
	R610	100 10% 2W Nonflammable WW	1-217-224-11	2W110	
	R611	3300 5% 1W Nonflammable Metal	1-215-872-11	1W233	
	R612	4700 5% 20W WW	1-205-744-11		
	R651	220 5% 20W WW	1-205-702-00		
	R653	12K 5% 2W Nonflammable	1-216-463-00	2W312	
#	R655	3300 5% 1/4W Carbon Film	1-246-485-75	QW233	
#	R656	47 5% 1/6W Nonflammable Carbon Film	1-249-401-51		
#	R702	4.7 5% 3W Nonflammable Metal Oxide Film	1-216-397-51	3W4D7	
	R722	15K 5% 2W Nonflammable Metal Oxide Film	1-206-692-00	2W315	
	R730	15K 5% 2W Nonflammable Metal Oxide Film	1-206-692-00	2W315	
	R737	15K 5% 2W Nonflammable Metal Oxide	1-206-692-00	2W315	
#	R842	680 5% 1/2W Nonflammable Carbon Film	1-249-415-51		
#	R849	47 5% 1/8W Nonflammable Carbon Film	1-246-987-11	EW047	
#	R1485	6.8 5% 1/6W Nonflammable Carbon Film	1-249-391-51		
	R1487	6.8 5% 1/6W Nonflammable Carbon Film	1-249-391-11		
#	R1499	3.9M 10% 1/2W Carbon Film	1-202-726-51	HW539	
	R1502	2200 5% 1W Nonflammable Metal Oxide Film	1-218-871-11	1W222	
	R1503	10 1% 1/6W Metal Film	1-215-373-31		
	R1508	270 5% 1W Nonflammable Metal Oxide Film	1-216-429-00	1W127	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
D651	U05G	NTE5806	ECG5806	SK3848/5806	212-Z9000	
	8-719-911-55	NTE5804	ECG5804	SK9007/5804	212-Z9000	
	GP08D	NTE156	ECG156	SK3051/156	212-Z9000	
D701,2,3	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D1402	RD10E-N2	NTE5019A	ECG5019A	SK10A/5019A	103-Z9010	#
	8-719-102-90	NTE5019A	ECG5019A	SK10A/5019A	103-Z9010	
	RD10E-N3TN	NTE5019A	ECG5019A	SK10A/5019A	103-Z9010	
D1501	U05G	NTE5806	ECG5806	SK3848/5806	212-Z9000	
	8-719-911-55	NTE5804	ECG5804	SK9007/5804	212-Z9000	
D1502	ERB43-04	NTE552	ECG552	SK9000/552	103-287	
	8-719-903-29	NTE552	ECG552	SK9000/552	103-287	
D1503	V19G	NTE558	ECG558	SK3998/558		
	8-719-918-77	NTE558	ECG558	SK3998/558		
	V19E	NTE552	ECG552	SK9000/552	103-Z87	
D1504	GU3A	NTE552	ECG552	SK9000/552	103-287	
	GU-3A	NTE552	ECG552	SK9000/552	103-287	
D1507	8-719-300-38	NTE552	ECG552	SK9000/552	103-287	
	RGP-10G	NTE552	ECG552	SK9000/552	103-287	
	ERC24-06S	NTE552	ECG552	SK9000/552	103-287	
	8-719-924-06	NTE552	ECG552	SK9000/552	103-287	
D1509	ES1F	NTE525	ECG525	SK3925/525	212-Z9010	
	8-719-300-65	NTE525	ECG525	SK3925/525	212-Z9010	
	RGP01-17	NTE525	ECG525	SK3925/525	212-Z9010	
D1510,11	GH3F	NTE506	ECG506	SK3125A/551	103-287	
	8-719-305-15	NTE506	ECG506	SK3125A/551	103-287	
	ERC26-15S	NTE506	ECG506	SK3125A/551	103-287	
D1512	ERD29-08J	NTE515	ECG515	SK9098/515	212-Z9007	
	8-719-900-26	NTE515	ECG515	SK9098/515	212-Z9007	
D1513	ES1F	NTE525	ECG525	SK3925/525	212-Z9010	
	8-719-300-65	NTE525	ECG525	SK3925/525	212-Z9010	
	RGP01-17	NTE525	ECG525	SK3925/525	212-Z9010	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFGR. PART No.
C143	1 50V NP	1-124-002-11
C144	1 50V NP	1-124-002-11
C217	.47 50V NP	1-124-655-11
C354	2.2 50V NP	1-124-272-00

ITEM No.	RATING	MFGR. PART No.
C512	22 16V 10%	1-131-373-00
C571	4.7 35V NP	1-124-648-00
C602	560 200V	1-125-215-00
C1514	470 50V 10%	1-124-609-11

Items Not Listed Are Normally Available At Local Distributors.

CAPACITORS

	ITEM No.	RATING	MFGR. PART No.
#	C201	120 NPO 50V 5%	1-102-816-00
	C350	68 NPO 50V 5%	1-101-888-00
#	C601	.22 125VAC	1-130-845-51
#	C1499	.0022 400V	1-161-742-51

	ITEM No.	RATING	MFGR. PART No.
#	C1529	.021 1.4KV	1-136-418-11
#	C1531	.056 630V 5%	1-136-316-51
	CP103	Capacitor Network	
	CP304	Capacitor Network	

For SAFETY use only equivalent replacement part.
Items Not Listed Are Normally Available At Local Distributors.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

	ITEM NO.	FUNCTION	RESISTANCE	MFGR. PART NO.	NOTES
	RV251	MPX Level	4700	1-230-271-00	
	RV301	Hue	20K	1-230-935-11(3)	
	RV302	Color	20K	1-230-935-11(3)	
	RV303	Brightness	20K Detent @ 50%	1-230-935-11(3)	
	RV304	Sharpness	20K Detent @ 50%	1-230-935-11(3)	
	RV306	Sub Contrast	22K	1-230-631-11	
	RV351	Comb	470	1-230-626-41	
	RV501	Vertical Size	10K	1-228-724-00	
	RV503	Horizontal	100K	1-228-728-00	
	RV505	Vertical Bias	10K	1-230-630-11	
	RV506	Vertical Frequency	22K	1-230-631-11	
#	RV701	Horizontal Static	110MEG	1-230-619-11	
	RV702	Blue Background	3300	1-228-722-00	
	RV703	Blue Drive	2200	1-228-721-00	
	RV704	Green Background	3300	1-228-722-00	
	RV705	Green Drive	2200	1-228-721-00	
	RV706	Red Background	4700	1-228-723-00	
	RV707	Sub Brightness	22K	1-228-725-00	
	RV708	Screen	2.2MEG	1-226-114-00	
#	RV800	Focus		(1)	
	RV1501	Pin Correct	22K	1-230-631-11	
	RV1502	Pin Phase	22K	1-230-631-11	
	RV1503	Horizontal Size	47K	1-230-633-11	
	RV1504	Pin Phase	1000	1-230-627-11	
	RV1505	Vertical Linearity	330	1-230-625-11	

For SAFETY use only equivalent replacement part.
(1) RV800 is part of #T1505 Flyback Transformer Part No. 1-439-372-12.
(3) When replacing anyone of these controls all four must be replaced-order by Assembly No. 1-230-935-11.

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
D1514,15	U05G	NTE5806	ECG5806	SK3848/5806	212-Z9000	
	8-719-911-55	NTE5804	ECG5804	SK9007/5804	212-Z9000	
	GP08D	NTE156	ECG156	SK3051/156	212-Z9000	
D1516,19	1SS119	NTE519	ECG519	SK3100/519	103-131	
	8-719-911-19	NTE519	ECG519	SK3100/519	103-131	
	1SS119TD	NTE519	ECG519	SK3100/519	103-131	
D1520	V19G	NTE558	ECG558	SK3998/558	103-287	
	8-719-918-77	NTE558	ECG558	SK3998/558		
	V19C	NTE552	ECG552	SK9000/552		
IC001	BX1387					
	8-741-138-70					
IC101	MB88505-403N					
	8-759-923-41					
IC102	UPD6251C					
	8-759-105-59					
	[uPC6251C]					
IC103	CX-7958					
	CX7958					
	8-759-909-50					
IC104	D6325C					
	UPD6325C					
	8-759-104-05					
	[uPD6325C]					
IC301	CX20193					
	8-752-019-30					
IC651	STR3035	NTE15012				
	8-749-930-35	NTE15012				
IC813	SI-4102					
	8-749-900-15					
IC1407	IAM-1					
	1-235-784-11					
IC1501	AN5521					
	8-759-402-35					

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
Q704	2SC2611	NTE157	ECG157	SK3747/157	121-Z9016	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
Q705	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q706	2SC2611	NTE157	ECG157	SK3747/157	121-Z9016	
	8-729-326-11	NTE157	ECG157	SK3747/157	121-Z9016	
Q1402	2SD774	NTE382	ECG382	SK3250/315	921-1114	
	8-729-177-43	NTE382	ECG382	SK3250/315	921-1114	
Q1409	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q1501	2SD1406	NTE377	ECG377	SK9391		#
	2SD1406-Y	NTE377	ECG377	SK9391		
	8-729-201-78	NTE377	ECG377	SK9391		
Q1502	2SD1497	NTE2300	ECG2300	SK9476/2300		#
	2SD1497-06	NTE2300	ECG2300	SK9476/2300		
	8-729-300-90	NTE2300	ECG2300	SK9476/2300		
Q1503	2SC2688KA	NTE157	ECG157	SK3747/157	121-Z9016	
	2SC2688	NTE157	ECG157	SK3747/157	121-Z9016	
	8-729-168-82	NTE157	ECG157	SK3747/157	121-Z9016	

\# For SAFETY use only equivalent replacement part.
* Lead configuration may vary from original.

WIRING DATA

High Voltage Lead	Use BELDEN No.	8866 (40 KV)
Shielded Hook-up Wire	Use BELDEN No.	8401 or 8421 (Single-Conductor)
		8208 (Two-Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8529 (Solid) Available in 13 Colors
		8522 (Stranded) Available in 13 Colors
300-Ohm Tuner Input Lead	Use BELDEN No.	8225
75-Ohm Tuner Input Lead	Use BELDEN No.	8241
300-Ohm Antenna Lead-In	Use BELDEN No.	8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) 4-Conductor
		8485 (Round) 5-Conductor
		8488 (Round) 8-Conductor

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
IC1502	C4558C	NTE778A	ECG778A	SK3465/778A	221-Z9034	
	UPC4558C	NTE778A	ECG778A	SK3465/778A	221-Z9034	
	8-759-145-58 [uPC4558C]	NTE778A	ECG778A	SK3465/778A	221-Z9034	
Q101,2	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q104	2SC1740SSN	NTE85	ECG85	SK9229/85	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q106,7,10,11	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q190	2SA933SQT	NTE290A	ECG290A	SK9132	121-Z9003	*
	2SA1175	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	8-729-117-54	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1175TP	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q202	2SA933SQT	NTE290A	ECG290A	SK9132	121-Z9003	*
	2SA1175	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	8-729-117-54	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1175TP	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q203 THRU Q207	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q301	2SA933SQT	NTE290A	ECG290A	SK9132	121-Z9003	*
	2SA1175	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	8-729-117-54	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1175TP	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
Q302,3	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q304	2SA933SQT	NTE290A	ECG290A	SK9132	121-Z9003	*
	2SA1175	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	8-729-117-54	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1175TP	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q305	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q306,7	2SA933SQT	NTE290A	ECG290A	SK9132	121-Z9003	*
	2SA1175	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	8-729-117-54	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1175TP	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q348,350	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q351,2	2SA933SQT	NTE290A	ECG290A	SK9132	121-Z9003	*
	2SA1175	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	8-729-117-54	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
	2SA1175TP	NTE290A	ECG290A	SK3114A/290A	121-Z9003	*
Q353 THRU Q359	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	

PARTS LIST AND DESCRIPTION (Continued)

When ordering parts, state Model, Part Number, and Description

SEMICONDUCTORS (Select replacement for best results)

ITEM No.	MFGR. PART No./ TYPE No.	NTE PART No.	ECG PART No.	RCA PART No.	ZENITH PART No.	NOTES
Q501	2SD1265P	NTE377	ECG377	SK9366/54		#
	2SD1406-Y	NTE377	ECG377	SK9391		
	8-729-201-78	NTE377	ECG377	SK9391		
	2SD1406	NTE377	ECG377	SK9391		
Q502	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q503	2SD774K	NTE382	ECG382	SK3250/315	921-1114	#
	2SD774-3	NTE382	ECG382	SK3250/315	921-1114	
	8-729-177-42	NTE382	ECG382	SK3250/315	921-1114	
	2SD774	NTE382	ECG382	SK3250/315	921-1114	
Q504	2SC1890AE	NTE90	ECG90	SK3931/90		
	2SC1890A	NTE90	ECG90	SK3931/90		
	8-729-309-08	NTE90	ECG90	SK3931/90		
	2SC1890A-D	NTE90	ECG90	SK3931/90		
Q505	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q601	2SC2551-O	NTE399	ECG399	SK9352/399	121-Z9045	*
	2SC2551	NTE399	ECG399	SK9352/399	121-Z9045	*
	8-729-255-12	NTE399	ECG399	SK9352/399	121-Z9045	*
Q701	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	
Q702	2SC2611	NTE157	ECG157	SK3747/157	121-Z9016	
	8-729-326-11	NTE157	ECG157	SK3747/157	121-Z9016	
Q703	603	NTE289A	ECG289A	SK9137/382	921-1114	
	2SC2785	NTE85	ECG85	SK3124A/289A	921-1114	
	8-729-178-54	NTE85	ECG85	SK3124A/289A	921-1114	
	2SC2785TP	NTE85	ECG85	SK3124A/289A	921-1114	